

=> fil reg

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STRUCTURE FILE UPDATES: 12 DEC 2008 HIGHEST RN 1083471-57-1  
 DICTIONARY FILE UPDATES: 12 DEC 2008 HIGHEST RN 1083471-57-1

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH July 5, 2008.

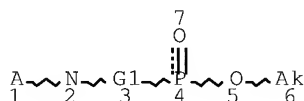
Please note that search-term pricing does apply when  
 conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and  
 predicted properties as well as tags indicating availability of  
 experimental property data in the original document. For information  
 on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stndoc/properties.html>

=> d que

L5 STR



REP G1=(0-10) CH2

NODE ATTRIBUTES:

NSPEC IS RC AT 1

CONNECT IS E1 RC AT 6

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

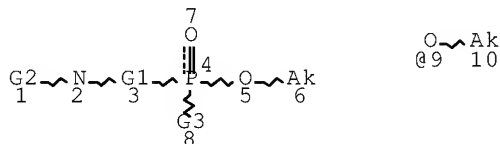
RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 7

STEREO ATTRIBUTES: NONE

L7 23648 SEA FILE=REGISTRY SSS FUL L5

L8 STR



REP G1=(0-10) CH2

VAR G2=AK/CY

VAR G3=OH/9

NODE ATTRIBUTES:

CONNECT IS E1 RC AT 6

CONNECT IS E1 RC AT 10

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

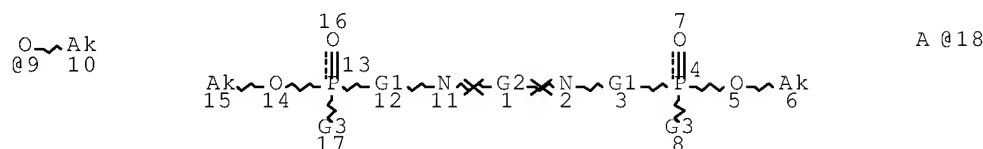
RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE

L10 12175 SEA FILE=REGISTRY SUB=L7 SSS FUL L8

L11 STR



REP G1=(0-10) CH2

REP G2=(1-10) 18

VAR G3=OH/9

NODE ATTRIBUTES:

NSPEC IS RC AT 18

CONNECT IS E1 RC AT 6

CONNECT IS E1 RC AT 10

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 18

STEREO ATTRIBUTES: NONE

L13 683 SEA FILE=REGISTRY SUB=L7 SSS FUL L11

L14 594 SEA FILE=REGISTRY ABB=ON PLU=ON L13 NOT M/ELS

L15 89 SEA FILE=REGISTRY ABB=ON PLU=ON L13 NOT L14

L16 36 SEA FILE=REGISTRY ABB=ON PLU=ON L15 AND (LI OR NA OR K  
OR RU OR FR OR BE OR MG OR CA OR SR OR BA OR RA)/ELS

L18 11770 SEA FILE=REGISTRY ABB=ON PLU=ON L10 NOT M/ELS

L19 405 SEA FILE=REGISTRY ABB=ON PLU=ON L10 NOT L18

L20 280 SEA FILE=REGISTRY ABB=ON PLU=ON L19 AND (LI OR NA OR K  
OR RU OR FR OR BE OR MG OR CA OR SR OR BA OR RA)/ELS

L23 299 SEA FILE=HCAPLUS ABB=ON PLU=ON L14

L24 11 SEA FILE=HCAPLUS ABB=ON PLU=ON L16

L25 5033 SEA FILE=HCAPLUS ABB=ON PLU=ON L18

L26 159 SEA FILE=HCAPLUS ABB=ON PLU=ON L20

L27 QUE ABB=ON PLU=ON (L23 OR L24 OR L25 OR L26)

L28 QUE ABB=ON PLU=ON (CEMENTITIOUS? OR CONCRET? OR CEMENT  
? OR GYPSUM? OR HYDRAULIC BINDER? OR HYDRAULIC?)

L29 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L27 AND L28

L30 24 SEA FILE=HCAPLUS ABB=ON PLU=ON L27 AND CORROSION  
INHIBITOR?

10/555,280

L31 82305 SEA FILE=HCAPLUS ABB=ON PLU=ON CONCRETE+PFT,NT/CT  
L32 0 SEA FILE=HCAPLUS ABB=ON PLU=ON L27 AND L31  
L33 25 SEA FILE=HCAPLUS ABB=ON PLU=ON L27 AND CORROSION(A) (INH  
IBIT? OR PREVENT?)  
L34 0 SEA FILE=HCAPLUS ABB=ON PLU=ON L27 AND STEEL REINFORC?  
L35 32 SEA FILE=HCAPLUS ABB=ON PLU=ON L29 OR L30 OR L32 OR L33  
OR L34  
L37 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L27 AND CONCRET?/SC, SX  
L38 37 SEA FILE=HCAPLUS ABB=ON PLU=ON L35 OR L37

=> fil hcap

FILE 'HCAPLUS' ENTERED AT 14:19:59 ON 15 DEC 2008  
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FILE COVERS 1907 - 15 Dec 2008 VOL 149 ISS 25  
FILE LAST UPDATED: 14 Dec 2008 (20081214/ED)

HCAplus now includes complete International Patent Classification (IPC) reclassification data for the third quarter of 2008.

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d 138 1-37 ibib ed abs hitstr hitind

L38 ANSWER 1 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 2005:1073671 HCAPLUS Full-text  
DOCUMENT NUMBER: 143:347629  
TITLE: Polymerizable phosphonic aminoalkylene compounds and copolymers of the aforesaid compounds with unsaturated ethylenic monomers, and use of such copolymers  
INVENTOR(S): Loubat, Cedric; Boutevin, Gilles  
PATENT ASSIGNEE(S): Specific Polymers, Fr.  
SOURCE: Fr. Demande, 22 pp.  
CODEN: FRXXBL  
DOCUMENT TYPE: Patent  
LANGUAGE: French  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2868423	A1	20051007	FR 2004-3272	20040330

10/555,280

FR 2868423 B1 20060728  
 WO 2005095423 A2 20051013 WO 2005-FR762 20050330  
 WO 2005095423 A3 20060126

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA,  
 CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
 GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP,  
 KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,  
 MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD,  
 SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US,  
 UZ, VC, VN, YU, ZA, ZM, ZW  
 RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,  
 AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ,  
 DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC,  
 NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA,  
 GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: FR 2004-3272 A 20040330

OTHER SOURCE(S): MARPAT 143:347629

ED Entered STN: 07 Oct 2005

AB Copolymers of polymerizable phosphonic aminoalkylene compds. such as  
 CH<sub>2</sub>:CMeCO<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>N[CH<sub>2</sub>PO(OMe)<sub>2</sub>]<sub>2</sub> and ethylenically unsatd. compds. are  
 manufactured and are useful for anticorrosive agents and adhesion promoters  
 for metal substrates and fireproofing agents for plastics.

IT 865605-41-0P

(copolymers of polymerizable phosphonic aminoalkylene compds. and  
 unsatd. ethylenic compds.)

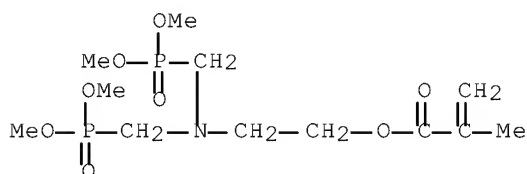
RN 865605-41-0 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-  
 [bis[(dimethoxyphosphinyl)methyl]amino]ethyl ester, polymer with butyl  
 2-propenoate and methyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 865605-40-9

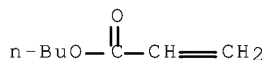
CMF C12 H25 N O8 P2



CM 2

CRN 141-32-2

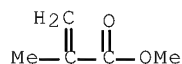
CMF C7 H12 O2



CM 3

CRN 80-62-6

CMF C5 H8 O2

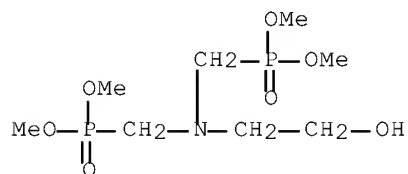


IT 865605-38-5P

(monomer precursor; copolymers of polymerizable phosphonic aminoalkylene compds. and unsatd. ethylenic compds.)

RN 865605-38-5 HCAPLUS

CN Phosphonic acid, [[(2-hydroxyethyl)imino]bis(methylene)]bis-, tetramethyl ester (9CI) (CA INDEX NAME)

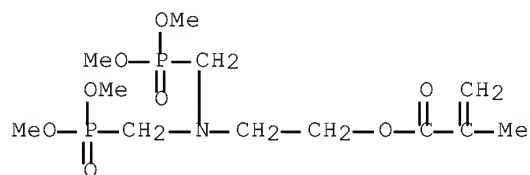


IT 865605-40-9P

(monomer; copolymers of polymerizable phosphonic aminoalkylene compds. and unsatd. ethylenic compds.)

RN 865605-40-9 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[bis[(dimethoxyphosphinyl)methyl]amino]ethyl ester (CA INDEX NAME)



IC ICM C07F009-40

ICS C08F220-12; C09K021-14; C08F230-02

CC 35-4 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 29, 55, 56

IT Corrosion inhibitors

(copolymers of polymerizable phosphonic aminoalkylene compds. and unsatd. ethylenic compds. as corrosion inhibitors for metals)

IT 865605-41-0P

10/555,280

(copolymers of polymerizable phosphonic aminoalkylene compds. and unsatd. ethylenic compds.)

IT 865605-38-5P

(monomer precursor; copolymers of polymerizable phosphonic aminoalkylene compds. and unsatd. ethylenic compds.)

IT 865605-40-9P

(monomer; copolymers of polymerizable phosphonic aminoalkylene compds. and unsatd. ethylenic compds.)

REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 2 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2005:453346 HCAPLUS Full-text

DOCUMENT NUMBER: 142:482507

TITLE: Dendrimers having bisphosphonic end groups and their derivatives, their preparation process, and their use

INVENTOR(S): Caminade, Anne Marie; Majoral, Jean Pierre; Griffe, Laurent; Turrin, Cedric Olivier; Metivier, Pascal

PATENT ASSIGNEE(S): Rhodia Consumer Specialties Ltd, UK; Centre National de la Recherche Scientifique CNRS

SOURCE: Fr. Demande, 52 pp.

CODEN: FRXXBL

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2862651	A1	20050527	FR 2003-13752	20031124
FR 2862651	B1	20060331		
CA 2546744	A1	20050609	CA 2004-2546744	20041123
WO 2005052031	A1	20050609	WO 2004-FR2988	20041123
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1692210	A1	20060823	EP 2004-805517	20041123
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS				
BR 2004016426	A	20070123	BR 2004-16426	20041123
CN 1902264	A	20070124	CN 2004-80039494	20041123
JP 2007512403	T	20070517	JP 2006-540527	20041123
IN 2006CN01822	A	20070223	IN 2006-CN1822	20060524
US 20070106030	A1	20070510	US 2006-580459	20060524
PRIORITY APPLN. INFO.:			FR 2003-13752	A 20031124
			WO 2004-FR2988	W 20041123

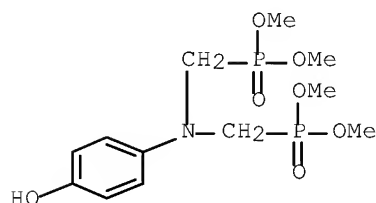
ED Entered STN: 27 May 2005

AB Dendrimers, useful for treating surfaces such as imparting lubrication, have  $A1[A2P(:O)(OX)_2]_2$  terminal groups [ $A1$  = divalent carbon radical or heteroatom,  $A2$  = C1-6 (substituted) (heteroatom-containing) hydrocarbylene,  $X$  = alkyl, aryl, H, or M+], cores having valence  $\geq 1$ , and generations 0-12. A typical dendrimer was manufactured by adding 1.3 mmol monomethylhydrazine and 0.7 g tetraisopropyl vinyl-gem-diphosphonate to  $CH_2Cl_2$  containing 0.07 mmol  $P3N3[O-p-C_6H_4CH:NNMeP(:S)(O-p-C_6H_4CHO)_2]_6$  ( $P3N3$  = cyclotriphosphazene) at  $0^\circ$  and stirring 24 h at room temperature

IT 852060-59-4DP, reaction products with dendritic methylphosphorodichloridothioic hydrazide-hydroxybenzaldehyde copolymers (dendrimers having bisphosphonic end groups and cyclotriphosphazene cores for lubricants)

RN 852060-59-4 HCAPLUS

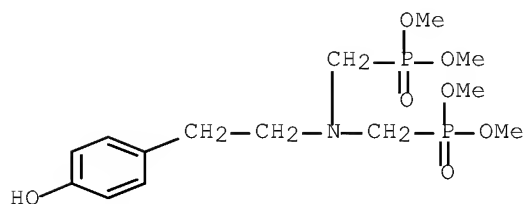
CN Phosphonic acid, [[(4-hydroxyphenyl)imino]bis(methylene)]bis-, tetramethyl ester (9CI) (CA INDEX NAME)



IT 852060-58-3P 852060-59-4P (precursor; dendrimers having bisphosphonic end groups and cyclotriphosphazene cores for lubricants)

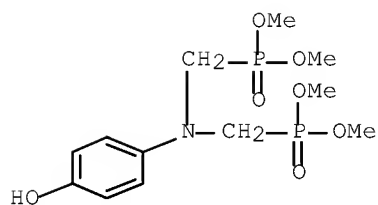
RN 852060-58-3 HCAPLUS

CN Phosphonic acid, P,P'-[[[2-(4-hydroxyphenyl)ethyl]imino]bis(methylene)]bis-, P,P,P',P'-tetramethyl ester (CA INDEX NAME)



RN 852060-59-4 HCAPLUS

CN Phosphonic acid, [[(4-hydroxyphenyl)imino]bis(methylene)]bis-, tetramethyl ester (9CI) (CA INDEX NAME)



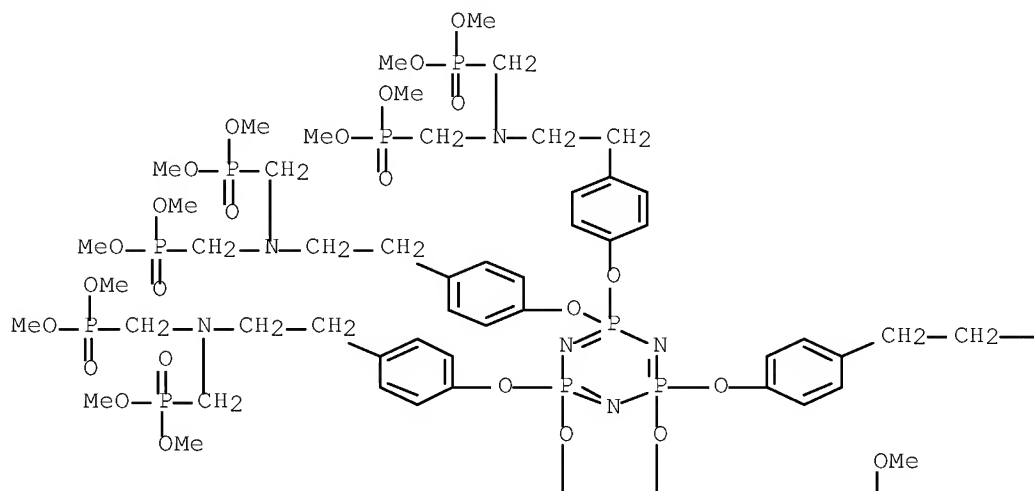
IT 852060-60-7P

(zero generation; dendrimers having bisphosphonic end groups and cyclotriphosphazene cores for lubricants)

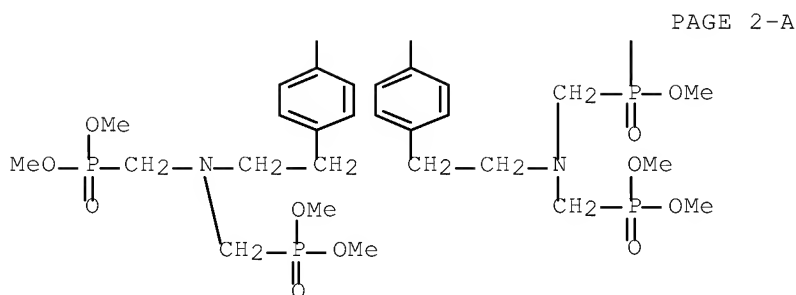
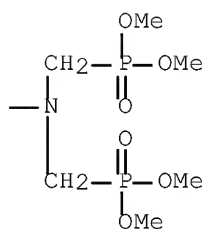
RN 852060-60-7 HCAPLUS

CN Phosphonic acid, P,P',P'',P''',P'''',P'''''',P''''''',P''''''',P''''''',P''''''',  
 ,P''''''',P''''''',P''''''',P''''''',P''''''',P''''''',P''''''',P''''''',P''''''',P''''''',  
 1,3,5,2,4,6-triazatriphosphorine-2,4,6-triylidenehexakis[oxy-4,1-  
 phenylene-2,1-ethanediyl nitrilobis(methylene)] dodecakis-,  
 P,P,P',P',P'',P'',P''',P''',P''',P''',P''',P''',P''',P''',P''',P''',  
 P''''''',P''''''',P''''''',P''''''',P''''''',P''''''',P''''''',P''''''',  
 ',P''''''',P''''''',P''''''',P''''''',P''''''',P''''''',P''''''',P''''''',  
 INDEX NAME)

PAGE 1-A







9

(dendrimers having bisphosphonic end groups and cyclotriphosphazene cores for lubricants)

IT 852060-58-3P 852060-59-4P

(precursor; dendrimers having bisphosphonic end groups and cyclotriphosphazene cores for lubricants)

IT 852060-60-7P 874919-47-8P

(zero generation; dendrimers having bisphosphonic end groups and cyclotriphosphazene cores for lubricants)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 3 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:131159 HCAPLUS Full-text

DOCUMENT NUMBER: 134:165481

TITLE: Phosphoroamidates, phosphorodiamidates, and phosphates as lubricating oil lubricity and corrosion inhibitor additives

INVENTOR(S): Nakagawa, Shoji; Kobabyashi, Yuichiro; Togashi, Hiroyasu; Hagihara, Toshiya; Taira, Koji

PATENT ASSIGNEE(S): Kao Corporation, Japan

SOURCE: U.S., 14 pp., Cont.-in-part of PCT 9724419.  
CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
US 6190574	B1	20010220	US 1998-106137	19980629
WO 9724419	A1	19970710	WO 1996-JP3868	19961226
W: CN, JP, KR, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
PRIORITY APPLN. INFO.:			JP 1995-353545	A 19951229
			WO 1996-JP3868	A2 19961226

OTHER SOURCE(S): MARPAT 134:165481

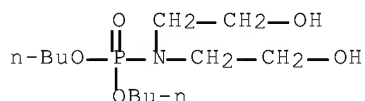
ED Entered STN: 22 Feb 2001

AB A lubricating oil additive (e.g., a lubricity additive and corrosion inhibitor) consists of a first phosphorous-containing component containing a P-N bond and a second phosphorous-containing component is a phosphate ester. The first phosphorous compound is selected from bis- and tetrakis(2-hydroxyethyl) phosphoroamidic acid esters and phosphorodiamidic acid esters, of general structures [R3O(R1O)p][R4O(R2O)q](R5)P(:O) and [R3O(R1O)p](R5)2P(:O), in which R1 and R2 = C2-4-alkylene; p and q = 0-30; R3 and R4 = C1-30-alkyl, C3-30-alkyl, C2-30-alkenyl, C3-30-branched alkenyl, C6-30-aryl; C7-30-aralkyl, C1-30-haloalkyl, and C6-30-haloaryl; and R5 = -N(CH2CH2OH)2; with the proviso that when p = 0, R3 is not H, and when q = 0, R4 is not H. The second phosphorous compound is of general structure (R6O)(R7O)(R8)P(:O), in which R6, R7, and R8 are C6-18-aryl, C1-18-alkyl, C3-18-branched alkyl, C2-18-alkenyl, and C3-18-branched alkenyl. The phosphorous-containing components are present at a 0.001-5.0:0.1-5.0 weight parts ratio of the first component to the second component, based on 100 weight parts of a base lubricating oil. The base oils can be hydrocarbon-based or synthetic, especially consisting of esters, cyclic ketals, cyclic acetals, polyethers, polyalkylene glycols, and carbonates. In addition, the lubricating oil additives are useful in hydrofluorocarbon-based refrigerants.

IT 31933-61-6, Phosphoramidic acid, bis(2-hydroxyethyl)-, dibutyl ester 125187-26-0, Phosphoramidic acid, bis(2-hydroxyethyl)-, bis(2-ethylhexyl) ester 193553-99-0, Phosphoramidic acid, bis(2-hydroxyethyl)-, didodecyl ester 193554-02-8, Phosphoramidic acid, (2-hydroxyethyl)methyl-, bis(2-ethylhexyl) ester  
(additives containing; phosphoroamidates, phosphorodiamidates, and phosphates as lubricating oil lubricity and corrosion inhibitor additives)

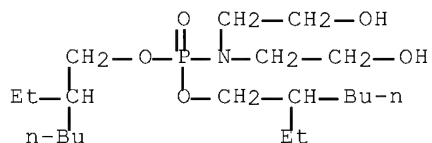
RN 31933-61-6 HCAPLUS

CN Phosphoramidic acid, bis(2-hydroxyethyl)-, dibutyl ester (8CI, 9CI)  
(CA INDEX NAME)



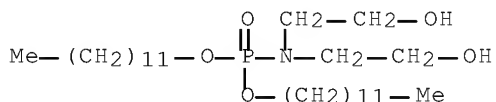
RN 125187-26-0 HCAPLUS

CN Phosphoramidic acid, bis(2-hydroxyethyl)-, bis(2-ethylhexyl) ester (9CI) (CA INDEX NAME)



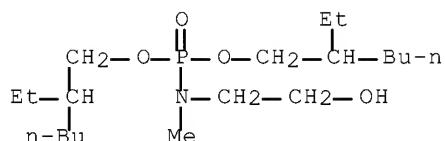
RN 193553-99-0 HCAPLUS

CN Phosphoramidic acid, bis(2-hydroxyethyl)-, didodecyl ester (9CI) (CA INDEX NAME)



RN 193554-02-8 HCAPLUS

CN Phosphoramidic acid, (2-hydroxyethyl)methyl-, bis(2-ethylhexyl) ester (9CI) (CA INDEX NAME)



- IC C09K005-00  
 INCL 252068000  
 CC 51-8 (Fossil Fuels, Derivatives, and Related Products)  
 ST lubricating oil lubricity ~~corrosion inhibitor~~;  
 phosphorodiamidate lubricating oil additive; phosphoroamidate  
 lubricating oil additive; hydrofluorocarbon refrigerant lubricating  
 oil additive; ester synthetic lubricating oil phosphoroamidate  
 additive  
 IT Lubricating oil additives  
 (~~corrosion inhibitors~~, for hydrocarbon and  
 synthetic oils; phosphoroamidates, phosphorodiamidates, and  
 phosphates as lubricating oil lubricity and ~~corrosion~~  
~~inhibitor additives~~)  
 IT Acetals  
 Ketals  
 (cyclic, synthetic base oils; phosphoroamidates,  
 phosphorodiamidates, and phosphates as lubricating oil lubricity  
 and ~~corrosion inhibitor additives~~)  
 IT Refrigerants  
 (hydrofluorocarbon, base oils; phosphoroamidates,  
 phosphorodiamidates, and phosphates as lubricating oil lubricity  
 and ~~corrosion inhibitor additives~~)  
 IT Lubricating oil additives  
 (lubricity, for hydrocarbon and synthetic oils; phosphoroamidates,  
 phosphorodiamidates, and phosphates as lubricating oil lubricity  
 and ~~corrosion inhibitor additives~~)  
 IT Esters, uses  
 Polyethers, uses  
 Polyoxyalkylenes, uses  
 (synthetic base oils; phosphoroamidates, phosphorodiamidates, and  
 phosphates as lubricating oil lubricity and ~~corrosion~~  
~~inhibitor additives~~)  
 IT 78-42-2, Tri(2-ethylhexyl) phosphate 115-86-6, Triphenyl phosphate  
 1330-78-5, Tricresyl phosphate 31933-61-6, Phosphoramidic  
 acid, bis(2-hydroxyethyl)-, dibutyl ester 125187-26-0,  
 Phosphoramidic acid, bis(2-hydroxyethyl)-, bis(2-ethylhexyl) ester  
 193553-99-0, Phosphoramidic acid, bis(2-hydroxyethyl)-,  
 didodecyl ester 193554-00-6, Phosphorodiamidic acid,  
 tetrakis(2-hydroxyethyl)-, dodecyl ester 193554-01-7, Phosphoric  
 acid, bis(2-ethylhexyl) 2-hydroxypropyl ester 193554-02-8,  
 Phosphoramidic acid, (2-hydroxyethyl)methyl-, bis(2-ethylhexyl) ester  
 (additives containing; phosphoroamidates, phosphorodiamidates, and  
 phosphates as lubricating oil lubricity and ~~corrosion~~  
~~inhibitor additives~~)  
 IT 811-97-2, 1,1,1,2-Tetrafluoroethane  
 (base refrigerant; phosphoroamidates, phosphorodiamidates, and  
 phosphates as lubricating oil lubricity and ~~corrosion~~  
~~inhibitor additives~~)  
 IT 111-14-8, n-Heptanoic acid 115-77-5D, Pentaerythritol, esters with  
 fatty and carboxylic acids 149-57-5D, 2-Ethylhexanoic acid, esters  
 with fatty and carboxylic acids and pentaerythritol 616-38-6D,

Dimethyl carbonate, esters with 3-methyl-1,5-pentanediol and 3-methylhexanoic acid 3302-10-1D, 3,5,5-Trimethylhexanoic acid, esters with fatty and carboxylic acids and pentaerythritol 3780-58-3D, 3-Methylhexanoic acid, esters with 3-methyl-1,5-pentanediol and di-Me carbonate 4457-71-0D, 3-Methyl-1,5-pentanediol, esters with di-Me carbonate and 3-methylhexanoic acid 4536-23-6D, 2-Methylhexanoic acid, esters with fatty and carboxylic acids and pentaerythritol 9038-95-3, Oxirane, methyl-, polymer with oxirane, monobutyl ether 20225-24-5D, 2-Ethylpentanoic acid, esters with fatty and carboxylic acids and pentaerythritol 138746-61-9, Poly[oxy(methyl-1,2-ethanediyl)], . $\alpha$ -(1-oxohexyl)-. $\omega$ -[(1-oxohexyl)oxy]- 147794-76-1, Hexanoic acid, 3,5-dimethyl-, 2-[[[(3,5-dimethyl-1-oxohexyl)oxy]methyl]-2-ethyl-1,3-propanediyl ester 175897-31-1 175897-40-2 (synthetic base oil; phosphoroamidates, phosphorodiamidates, and phosphates as lubricating oil lubricity and corrosion inhibitor additives)

IT 463-79-6D, Carbonic acid, esters, uses (synthetic base oils; phosphoroamidates, phosphorodiamidates, and phosphates as lubricating oil lubricity and corrosion inhibitor additives)

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 4 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1999:618870 HCAPLUS Full-text  
 DOCUMENT NUMBER: 131:258626  
 TITLE: Urethane prepolymer compositions for ballast adhesives  
 INVENTOR(S): Hayano, Satoshi; Saito, Hitoshi  
 PATENT ASSIGNEE(S): Asahi Denka Kogyo K. K., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 11263906	A	19990928	JP 1998-68500	19980318
PRIORITY APPLN. INFO.:			JP 1998-68500	19980318

OTHER SOURCE(S): MARPAT 131:258626

ED Entered STN: 28 Sep 1999

AB Title compns. comprise 100 parts isocyanate-terminated urethane prepolymer prepared by reaction of fireproofing polyols and optional another polyols with polyisocyanates (NCO/OH = 1.1-10.0), and 1-100 parts  $\geq 1$  nonreactive phosphoric acid ester fireproofing agents. Thus, a composition containing a prepolymer [prepared from 1500 g 4,4'-diphenylmethane diisocyanate (Lupranate MI) and 447 g polyphosphoric acid-propylene oxide adducts (FB 330)], another prepolymer [prepared from 3000 g propylene glycol-ethylene oxide-propylene oxide adduct (PR 3007) and 500 g Lupranate MI], and tris(3-chloropropyl) phosphate was cured by using ketimine compds. to give a test piece showing good flame retardance and weather resistance.

IT 244616-29-3P 244616-30-6P

(urethane prepolymer compns. for ballast adhesives having good flame retardance and weather resistance)

RN 244616-29-3 HCAPLUS

10/555,280

CN Phosphonic acid, [[bis(2-hydroxyethyl)amino]methyl]-, diethyl ester,  
polymer with Lupranate MI, methyloxirane and oxirane (9CI) (CA INDEX  
NAME)

CM 1

CRN 117744-37-3

CMF Unspecified

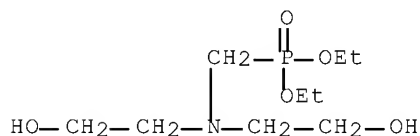
CCI MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 2781-11-5

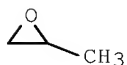
CMF C9 H22 N O5 P



CM 3

CRN 75-56-9

CMF C3 H6 O



CM 4

CRN 75-21-8

CMF C2 H4 O



RN 244616-30-6 HCAPLUS

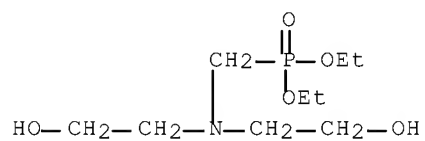
CN Phosphonic acid, [[bis(2-hydroxyethyl)amino]methyl]-, diethyl ester,  
polymer with 1,1'-methylenebis[4-isocyanatobenzene], methyloxirane and  
oxirane (9CI) (CA INDEX NAME)

10/555,280

CM 1

CRN 2781-11-5

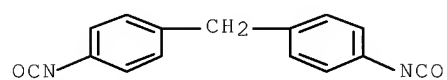
CMF C9 H22 N O5 P



CM 2

CRN 101-68-8

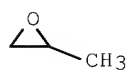
CMF C15 H10 N2 O2



CM 3

CRN 75-56-9

CMF C3 H6 O



CM 4

CRN 75-21-8

CMF C2 H4 O



IC ICM C08L075-04

ICS C08G018-50; C08K005-29; C08K005-521; C08G018-10; C08G018-42;  
C08G018-48

CC 38-3 (Plastics Fabrication and Uses)  
 Section cross-reference(s): 58

IT 101-68-8DP, 4,4'-Diphenylmethane diisocyanate, polymers with Adeka PR 3007 and propoxylated polyphosphoric acids 117744-37-3DP, Lupranate MI, polymers with Adeka PR 3007 and propoxylated polyphosphoric acids 244616-29-3P 244616-30-6P 244616-31-7P 244616-32-8P  
 (urethane prepolymer compns. for ballast adhesives having good flame retardance and weather resistance)

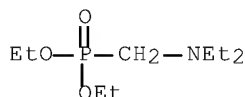
L38 ANSWER 5 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1998:722233 HCAPLUS Full-text  
 DOCUMENT NUMBER: 130:82876  
 TITLE: On the influence of IPKhAN corrosion inhibitors on polymer coatings and materials  
 AUTHOR(S): Gerasimenko, A. A.; Kalinovskii, S. A.; Solov'ev, A. I.  
 CORPORATE SOURCE: Institute of Physical Chemistry, Russian Academy of Sciences, Moscow, 117915, Russia  
 SOURCE: Protection of Metals (Translation of Zashchita Metallov) (1998), 34(5), 480-484  
 CODEN: PTNMAR; ISSN: 0033-1732  
 PUBLISHER: MAIK Nauka/Interperiodica Publishing  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 ED Entered STN: 16 Nov 1998

AB The effect of volatile corrosion inhibitors of the IPKhAN type, in enclosed spaces, on the protective properties of polymer coatings, as well as on the physicochem. properties of some polymeric materials, was studied. This work deals with the interaction of the inhibitors with polymer paint coatings based on perchlorovinyl resin and the kinetic peculiarities of IPKhAN-1 sorption by a flexible PVC.

IT 995-14-2, Diethyl diethylaminomethanephosphonate (IPKhAN 120; corrosion inhibitors with polymers and properties of on polymer coatings containing IPKhAN type corrosion inhibitors)

RN 995-14-2 HCAPLUS

CN Phosphonic acid, [(diethylamino)methyl]-, diethyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



CC 42-5 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 55

ST volatile corrosion inhibitor interaction polymer coating; PVC coating interaction volatile corrosion inhibitor; perchlorovinyl resin coating interaction volatile corrosion inhibitor

IT Alkyd resins  
 (PF 223; corrosion inhibitors with polymers and properties of on polymer coatings containing IPKhAN type corrosion inhibitors)



- IT Coating materials  
(anticorrosive; corrosion inhibitors with  
polymers and properties of on polymer coatings containing IPKhAN type  
corrosion inhibitors)
- IT Corrosion inhibitors  
(corrosion inhibitors with polymers and  
properties of on polymer coatings containing IPKhAN type  
corrosion inhibitors)
- IT Epoxy resins, uses  
(corrosion inhibitors with polymers and  
properties of on polymer coatings containing IPKhAN type  
corrosion inhibitors)
- IT Sorption  
(corrosion inhibitors with polymers and  
properties of on polymer coatings containing IPKhAN type  
corrosion inhibitors in relation to inhibitor  
sorption in PVC)
- IT Vinyl compounds, uses  
(perchloro, polymers; corrosion inhibitors with  
polymers and properties of on polymer coatings containing IPKhAN type  
corrosion inhibitors)
- IT 120714-24-1, 1-Diethylamino-2-methylbutan-3-one oxime  
(IPKhAN 100; interaction of IPKhAN type corrosion  
inhibitors with polymers and properties of on polymer  
coatings containing IPKhAN type corrosion inhibitors  
)
- IT 5351-04-2, N,N-Diethylaminopropionitrile  
(IPKhAN 110; interaction of IPKhAN type corrosion  
inhibitors with polymers and properties of on polymer  
coatings containing IPKhAN type corrosion inhibitors  
)
- IT 995-14-2, Diethyl diethylaminomethanephosphonate  
(IPKhAN 120; corrosion inhibitors with polymers  
and properties of on polymer coatings containing IPKhAN type  
corrosion inhibitors)
- IT 2917-91-1, 1-Diethylamino-2,3-epoxypropane  
(IPKhAN 130; corrosion inhibitors with polymers  
and properties of on polymer coatings containing IPKhAN type  
corrosion inhibitors)
- IT 25115-53-1, 1-Diethylamino-2-methylbutan-3-one  
(IPKhAN 1; interaction of IPKhAN type corrosion  
inhibitors with polymers and properties of on polymer  
coatings containing IPKhAN type corrosion inhibitors  
)
- IT 6425-08-7, Dimorpholinephenylmethane  
(VNXh-L 20; corrosion inhibitors with polymers  
and properties of on polymer coatings containing corrosion  
inhibitors)
- IT 12616-84-1, D 16  
(alloy; corrosion inhibitors with polymers and  
properties of on polymer coatings containing IPKhAN type  
corrosion inhibitors)
- IT 9002-86-2, PVC 9003-63-8, AK 070 12789-27-4, KhV 16 39360-56-0,  
EP 140 58516-86-2, FL 086  
(corrosion inhibitors with polymers and  
properties of on polymer coatings containing IPKhAN type  
corrosion inhibitors)
- IT 218768-80-0, IPKhAN 1n  
(interaction of IPKhAN type corrosion inhibitors  
with polymers and properties of on polymer coatings containing IPKhAN

type corrosion inhibitors)

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR  
THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
RE FORMAT

L38 ANSWER 6 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1993:482180 HCAPLUS Full-text

DOCUMENT NUMBER: 119:82180

ORIGINAL REFERENCE NO.: 119:14567a,14570a

TITLE: Cadmium electroplates with the improved corrosion  
resistanceAUTHOR(S): Savochkina, I. E.; Berseneva, L. N.; Khaldeev, G.  
V.CORPORATE SOURCE: Estestv.-Nauchn. Inst., Perm. Gos. Univ., Perm,  
Russia

SOURCE: Zashchita Metallov (1993), 29(2), 301-4

CODEN: ZAMEA9; ISSN: 0044-1856

DOCUMENT TYPE: Journal

LANGUAGE: Russian

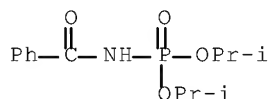
ED Entered STN: 21 Aug 1993

AB Cd electroplates modified by using organophosphorus additives to increase the  
corrosion resistance were studied. The electroplating was done on samples of  
low-C steel St05kp (10 + 10 + 0.2 mm) from a bath containing CdSO<sub>4</sub>.(8/3) H<sub>2</sub>O  
50, NH<sub>4</sub>Cl 250, urotropine 15, joiners glue 1, and an organophosphorus compound  
from the class of phosphorylated thioamides 0.1 g/L. The conditions of  
electrolysis were: cathodic c.d. 50-150 A/m<sup>2</sup>, temperature 22 ± 3°, without  
agitation. Corrosion tests were made in 3% NaCl solution. A significant  
increase in the corrosion resistance of Cd electroplates can be obtained by  
introducing into the bath organophosphorus additives forming complexes with  
the Cd and Fe.

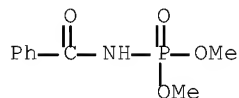
IT 3808-08-0 24856-23-3

(in cadmium electroplating for improved corrosion resistance)

RN 3808-08-0 HCAPLUS

CN Phosphoramidic acid, N-benzoyl-, bis(1-methylethyl) ester (CA INDEX  
NAME)

RN 24856-23-3 HCAPLUS

CN Phosphoramidic acid, benzoyl-, dimethyl ester (6CI, 7CI, 8CI, 9CI)  
(CA INDEX NAME)

CC 72-8 (Electrochemistry)

Section cross-reference(s): 56

ST cadmium electroplate corrosion resistance; organophosphorus additive  
cadmium electroplating; phosphorylated thioamide corrosion  
inhibitor  
IT Corrosion inhibitors  
(organophosphorus compds., for cadmium electroplating)  
IT 3808-08-0 24856-23-3 66078-55-5,  
N-Diisopropoxythiophosphorylthiobenzamide 106834-08-6 121221-00-9  
128342-57-4 148934-73-0  
(in cadmium electroplating for improved corrosion resistance)

L38 ANSWER 7 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1991:107955 HCAPLUS Full-text

DOCUMENT NUMBER: 114:107955

ORIGINAL REFERENCE NO.: 114:18263a,18266a

TITLE: Cellular fireproof lightweight construction  
materials, and their manufacture and use

INVENTOR(S): Von Bonin, Wulf; Schaepel, Dietmar

PATENT ASSIGNEE(S): Bayer A.-G., Germany

SOURCE: Eur. Pat. Appl., 12 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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EP 400402	A1	19901205	EP 1990-109299	19900517
EP 400402	B1	19931006		
R: BE, DE, DK, ES, FR, GB, IT, NL, SE				
DE 3917518	A1	19901206	DE 1989-3917518	19890530
US 5173515	A	19921222	US 1990-521789	19900510
ES 2059875	T3	19941116	ES 1990-109299	19900517
JP 03035088	A	19910215	JP 1990-134277	19900525
JP 2841716	B2	19981224		
PRIORITY APPLN. INFO.:			DE 1989-3917518	A 19890530

ED Entered STN: 23 Mar 1991

AB The construction materials contain  $\geq 1$  of amine salts, borates, and P-containing polyols in addition to expanded graphite and, optionally, the usual additives. The construction materials are manufactured by adding the above components to a reaction mixture for the manufacture of the cellular material. A mixture of polyether-polyol (obtained by addition of propylene acid and ethylene oxide to glycerin) 100, Phosphor-Diol P [(EtO)<sub>2</sub>POCH<sub>2</sub>N(C<sub>2</sub>H<sub>4</sub>OH)<sub>2</sub>] 60, red Fe oxide 2, Al(OH)<sub>3</sub> 15, melamine phosphate 50, water 1, and Sigraflex FR 90-60/80 (expanded graphite) 20, was mixed with Desmodur 44 V20 (polyisocyanate) to give a cellular material having d. 210 kg/m<sup>3</sup>.

IT 132229-65-3 132293-91-5 132300-42-6  
(building materials containing expanded graphite and, cellular  
fireproof)

RN 132229-65-3 HCAPLUS

CN Isocyanic acid, polymethylenepolyphenylene ester, polymer with diethyl [[bis(2-hydroxyethyl)amino]methyl]phosphonate and methyloxirane polymer with oxirane ether with 1,2,3-propanetriol (3:1) (9CI) (CA INDEX NAME)

CM 1

CRN 9016-87-9

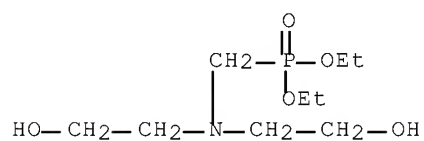
10/555,280

CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 2781-11-5  
CMF C9 H22 N O5 P

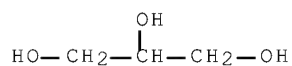


CM 3

CRN 9082-00-2  
CMF C3 H8 O3 . 3 (C3 H6 O . C2 H4 O) x

CM 4

CRN 56-81-5  
CMF C3 H8 O3

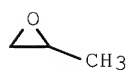


CM 5

CRN 9003-11-6  
CMF (C3 H6 O . C2 H4 O) x  
CCI PMS

CM 6

CRN 75-56-9  
CMF C3 H6 O



CM 7

CRN 75-21-8

CMF C2 H4 O



RN 132293-91-5 HCAPLUS

CN Isocyanic acid, polymethylenepolyphenylene ester, polymer with diethyl  
[[bis(2-hydroxyethyl)amino]methyl]phosphonate and methyloxirane  
polymer with oxirane ether with  
2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1) (9CI) (CA INDEX NAME)

CM 1

CRN 9016-87-9

CMF Unspecified

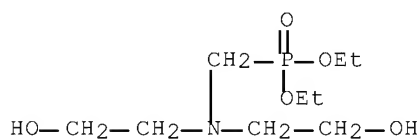
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 2781-11-5

CMF C9 H22 N O5 P



CM 3

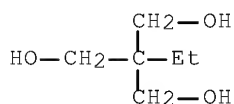
CRN 52624-57-4

CMF C6 H14 O3 . 3 (C3 H6 O . C2 H4 O) x

CM 4

CRN 77-99-6

CMF C6 H14 O3



CM 5

CRN 9003-11-6

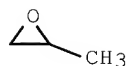
CMF (C3 H6 O . C2 H4 O) x

CCI PMS

CM 6

CRN 75-56-9

CMF C3 H6 O



CM 7

CRN 75-21-8

CMF C2 H4 O



RN 132300-42-6 HCAPLUS

CN Isocyanic acid, polymethylenepolyphenylene ester, polymer with  
 1,4-butanediol, diethyl [[bis(2-hydroxyethyl)amino]methyl]phosphonate  
 and methyloxirane polymer with oxirane ether with  
 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1) (9CI) (CA INDEX NAME)

CM 1

CRN 9016-87-9

CMF Unspecified

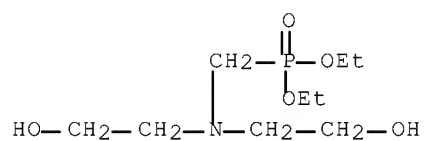
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 2781-11-5

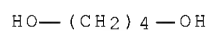
CMF C9 H22 N O5 P



CM 3

CRN 110-63-4

CMF C4 H10 O2



CM 4

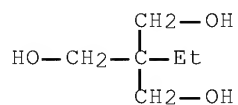
CRN 52624-57-4

CMF C6 H14 O3 . 3 (C3 H6 O . C2 H4 O) x

CM 5

CRN 77-99-6

CMF C6 H14 O3



CM 6

CRN 9003-11-6

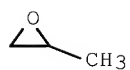
CMF (C3 H6 O . C2 H4 O) x

CCI PMS

CM 7

CRN 75-56-9

CMF C3 H6 O



CM 8

CRN 75-21-8

CMF C2 H4 O



IC ICM C09K021-06  
 CC 58-6 (Cement, Concrete, and Related Building Materials)  
 IT 132229-65-3 132293-91-5 132300-41-5  
 132300-42-6  
 (building materials containing expanded graphite and, cellular  
 fireproof)

L38 ANSWER 8 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1989:520179 HCAPLUS Full-text  
 DOCUMENT NUMBER: 111:120179  
 ORIGINAL REFERENCE NO.: 111:20037a,20040a  
 TITLE: Aluminum hydroxide fireproofing agents containing  
 calcium borate, and finished and semifinished  
 products containing these agents  
 INVENTOR(S): Von Bonin, Wulf  
 PATENT ASSIGNEE(S): Bayer A.-G., Fed. Rep. Ger.  
 SOURCE: Eur. Pat. Appl., 8 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	---	-----	-----	-----
EP 306805	A2	19890315	EP 1988-114111	19880830
EP 306805	A3	19890510		
EP 306805	B1	19910703		
R: BE, CH, DE, FR, GB, LI, NL, SE				
DE 3730204	A1	19890330	DE 1987-3730204	19870909
JP 01070587	A	19890316	JP 1988-220567	19880905
US 5034056	A	19910723	US 1989-441197	19891122
PRIORITY APPLN. INFO.:			DE 1987-3730204	A 19870909
			US 1988-235344	B1 19880823

ED Entered STN: 01 Oct 1989

AB The title fireproofing agents are comprised of 25-75 weight% Al(OH)<sub>3</sub> and Ca borates and may addnl. contain binders and auxiliary agents. The Al(OH)<sub>3</sub> may be in the hydrated form or the partially dehydrated form thereof. The Ca borate may be a natural mineral or a form resembling a natural mineral and is a borate which splits off H<sub>2</sub>O at >100°. The fireproofing effectiveness of the combination is demonstrated for a series of polymers, grouts, building plates, and felts, the latter being especially used to protect structural elements.

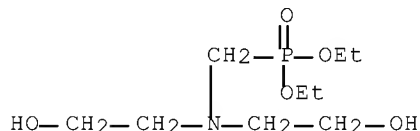
IT 2781-11-5



(polyurethane foam containing, fireproofing with aluminum hydroxide and calcium borate)

RN 2781-11-5 HCAPLUS

CN Phosphonic acid, P-[[bis(2-hydroxyethyl)amino]methyl]-, diethyl ester  
(CA INDEX NAME)



IC ICM C09K021-02

CC 59-5 (Air Pollution and Industrial Hygiene)

Section cross-reference(s): 38, 58

IT 2781-11-5

(polyurethane foam containing, fireproofing with aluminum hydroxide and calcium borate)

L38 ANSWER 9 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1989:25484 HCAPLUS Full-text

DOCUMENT NUMBER: 110:25484

ORIGINAL REFERENCE NO.: 110:4293a,4296a

TITLE: Intumescent compositions for fire-resistant coatings and moldings

INVENTOR(S): Von Bonin, Wulf

PATENT ASSIGNEE(S): Bayer A.-G., Fed. Rep. Ger.

SOURCE: Ger. Offen., 14 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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DE 3643708	A1	19880630	DE 1986-3643708	19861220
EP 274068	A2	19880713	EP 1987-118126	19871208
EP 274068	A3	19880817		
R: BE, CH, DE, FR, GB, LI, NL				
US 4857364	A	19890815	US 1987-132513	19871214
JP 63165424	A	19880708	JP 1987-315398	19871215
PRIORITY APPLN. INFO.:			DE 1986-3643708	A 19861229

OTHER SOURCE(S): MARPAT 110:25484

ED Entered STN: 21 Jan 1989

AB The title compns., giving significantly better fire resistance, contain polyether polyols (OH number 150-400) 5-25, polyester polyols (OH number 120-400) 5-35, polyols containing 10-15% P 5-25, inert drying agents 0-10, dehydratable fillers 20-85, other inorg. additives 0-30, catalysts 0-3%, and 70-130% of the stoichiometric amount of polyisocyanates. Thus, a mixture of 6:1:0.25:5.25 adipic acid-pentaerythritol-glycerol-ethylene glycol polyester (OH number 256) 1700, (HOCH<sub>2</sub>CH<sub>2</sub>)<sub>2</sub>NCH<sub>2</sub>PO(OEt)<sub>2</sub> 1700, calcined zeolite 250, Al(OH)<sub>3</sub> 3400, TiO<sub>2</sub> 102, oleylamine 68, and tech. MDI 2380 parts was coated (2 cm) on steel plate. In a small-chamber fire test, the temperature on the uncoated side of the steel was 85, 111, 111, and 170° after 30, 60, 90, and

10/555,280

120 min, resp., and the height of the intumescent layer was 15 cm; vs. 105, 171, 300, 405, and 11, resp., when the composition also contained 300 parts melamine pyrophosphate.

IT 118031-80-4 118050-54-7 118050-55-8  
118050-56-9 118071-69-5 118145-26-9  
118145-27-0

(in fire-resistant intumescent compns.)

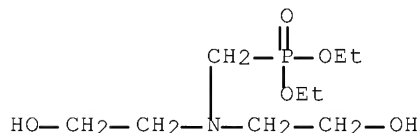
RN 118031-80-4 HCAPLUS

CN Hexanedioic acid, polymer with 2,2-bis(hydroxymethyl)-1,3-propanediol, diethyl [[bis(2-hydroxyethyl)amino]methyl]phosphonate, 1,2-ethanediol, 1,1'-methylenebis[4-isocyanatobenzene] and 1,2,3-propanetriol (9CI)  
(CA INDEX NAME)

CM 1

CRN 2781-11-5

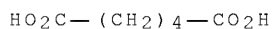
CMF C9 H22 N O5 P



CM 2

CRN 124-04-9

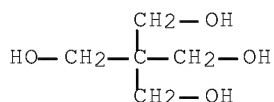
CMF C6 H10 O4



CM 3

CRN 115-77-5

CMF C5 H12 O4

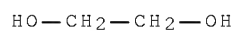


CM 4

CRN 107-21-1

10/555,280

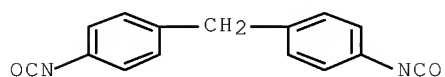
CMF C2 H6 O2



CM 5

CRN 101-68-8

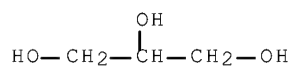
CMF C15 H10 N2 O2



CM 6

CRN 56-81-5

CMF C3 H8 O3



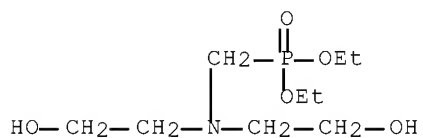
RN 118050-54-7 HCAPLUS

CN Hexanedioic acid, polymer with 2,2-bis(hydroxymethyl)-1,3-propanediol, diethyl [[bis(2-hydroxyethyl)amino]methyl]phosphonate, 2,2-dimethyl-1,3-propanediol, 1,2-ethanediol, 1,1'-methylenebis[4-isocyanatobenzene] and 1,2,3-propanetriol (9CI) (CA INDEX NAME)

CM 1

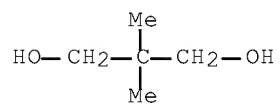
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CMF C9 H22 N O5 P



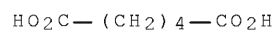
CM 2

CRN 126-30-7  
CMF C5 H12 O2



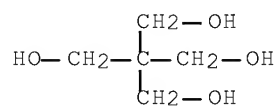
CM 3

CRN 124-04-9  
CMF C6 H10 O4



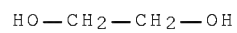
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CRN 115-77-5  
CMF C5 H12 O4



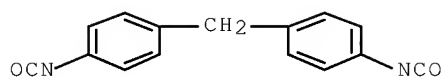
CM 5

CRN 107-21-1  
CMF C2 H6 O2



CM 6

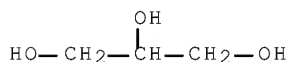
CRN 101-68-8  
CMF C15 H10 N2 O2



CM 7

CRN 56-81-5

CMF C3 H8 O3



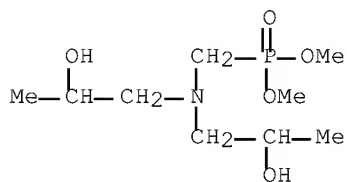
RN 118050-55-8 HCAPLUS

CN Hexanedioic acid, polymer with 2,2-bis(hydroxymethyl)-1,3-propanediol, diethyl [[bis(2-hydroxyethyl)amino]methyl]phosphonate, 1,3-diisocyanatomethylbenzene, dimethyl [[bis(2-hydroxypropyl)amino]methyl]phosphonate, 2,2-dimethyl-1,3-propanediol, 1,2-ethanediol,  $\alpha$ -hydro- $\omega$ -hydroxypoly(oxy-1,2-ethanediyl) ether with  $\beta$ -D-fructofuranosyl  $\alpha$ -D-glucopyranoside, 1,1'-methylenebis[4-isocyanatobenzene], methyloxirane polymer with oxirane ether with 1,2,3-propanetriol (3:1), and 1,2,3-propanetriol (9CI) (CA INDEX NAME)

CM 1

CRN 38843-86-6

CMF C9 H22 N O5 P



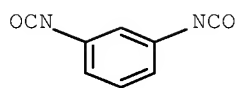
CM 2

CRN 26471-62-5

CMF C9 H6 N2 O2

CCI IDS

10/555,280

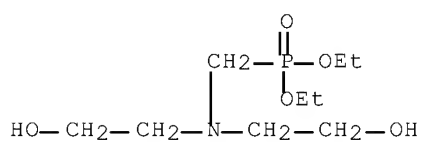


D1—Me

CM 3

CRN 2781-11-5

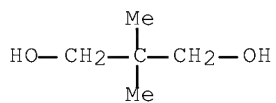
CMF C9 H22 N O5 P



CM 4

CRN 126-30-7

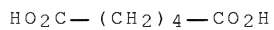
CMF C5 H12 O2



CM 5

CRN 124-04-9

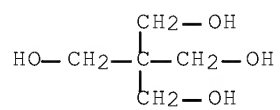
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CM 6

CRN 115-77-5

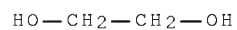
CMF C5 H12 O4



CM 7

CRN 107-21-1

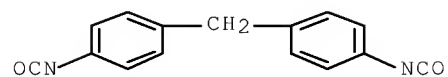
CMF C2 H6 O2



CM 8

CRN 101-68-8

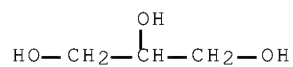
CMF C15 H10 N2 O2



CM 9

CRN 56-81-5

CMF C3 H8 O3



CM 10

CRN 39393-07-2

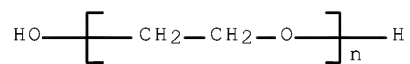
CMF C12 H22 O11 . x (C2 H4 O)n H2 O

CM 11

CRN 25322-68-3

CMF (C2 H4 O)n H2 O

CCI PMS

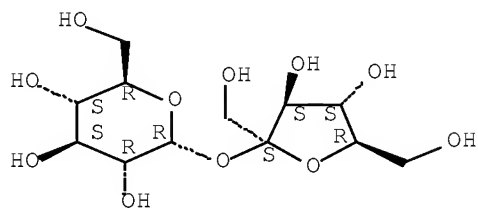


CM 12

CRN 57-50-1

CMF C12 H22 O11

Absolute stereochemistry.



CM 13

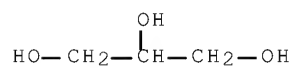
CRN 9082-00-2

CMF C3 H8 O3 . 3 (C3 H6 O . C2 H4 O) x

CM 14

CRN 56-81-5

CMF C3 H8 O3



CM 15

CRN 9003-11-6

CMF (C3 H6 O . C2 H4 O) x

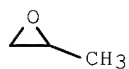
CCI PMS

CM 16

CRN 75-56-9

CMF C3 H6 O





CM 17

CRN 75-21-8

CMF C2 H4 O



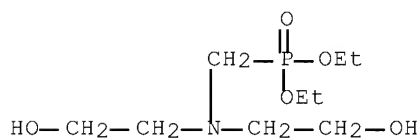
RN 118050-56-9 HCAPLUS

CN Hexanedioic acid, polymer with 2,2-bis(hydroxymethyl)-1,3-propanediol, diethyl [[bis(2-hydroxyethyl)amino]methyl]phosphonate, 1,2-ethanediol, 1,1'-methylenebis[4-isocyanatobenzene], methyloxirane polymer with oxirane ether with 1,2,3-propanetriol (3:1), and 1,2,3-propanetriol (9CI) (CA INDEX NAME)

CM 1

CRN 2781-11-5

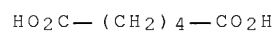
CMF C9 H22 N O5 P



CM 2

CRN 124-04-9

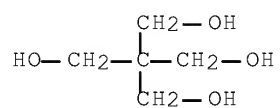
CMF C6 H10 O4



CM 3

CRN 115-77-5

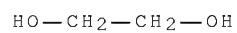
CMF C5 H12 O4



CM 4

CRN 107-21-1

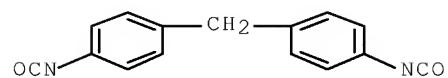
CMF C2 H6 O2



CM 5

CRN 101-68-8

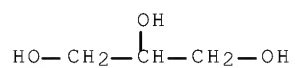
CMF C15 H10 N2 O2



CM 6

CRN 56-81-5

CMF C3 H8 O3



CM 7

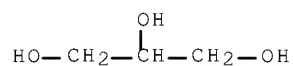
CRN 9082-00-2

CMF C3 H8 O3 . 3 (C3 H6 O . C2 H4 O) x

CM 8

CRN 56-81-5

CMF C3 H8 O3



CM 9

CRN 9003-11-6

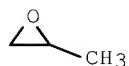
CMF (C3 H6 O . C2 H4 O) x

CCI PMS

CM 10

CRN 75-56-9

CMF C3 H6 O



CM 11

CRN 75-21-8

CMF C2 H4 O

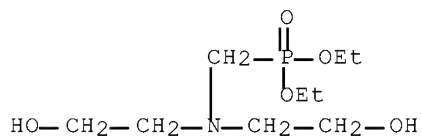


RN 118071-69-5 HCAPLUS  
 CN Phosphonic acid, [[bis(2-hydroxyethyl)amino]methyl]-, diethyl ester,  
 polymer with 1,1'-methylenebis[4-isocyanatobenzene] and methyloxirane  
 polymer with oxirane ether with 1,2,3-propanetriol (3:1) (9CI) (CA  
 INDEX NAME)

CM 1

CRN 2781-11-5

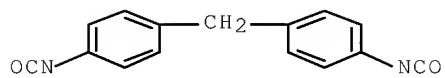
CMF C9 H22 N O5 P



CM 2

CRN 101-68-8

CMF C15 H10 N2 O2



CM 3

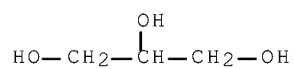
CRN 9082-00-2

CMF C3 H8 O3 . 3 (C3 H6 O . C2 H4 O) x

CM 4

CRN 56-81-5

CMF C3 H8 O3



CM 5

CRN 9003-11-6

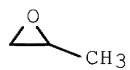
CMF (C3 H6 O . C2 H4 O) x

CCI PMS

CM 6

CRN 75-56-9

CMF C3 H6 O



CM 7

CRN 75-21-8

10/555,280

CMF C2 H4 O



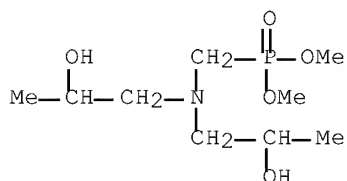
RN 118145-26-9 HCAPLUS

CN Hexanedioic acid, polymer with 2,2-bis(hydroxymethyl)-1,3-propanediol, 1,3-diisocyanatomethylbenzene, dimethyl [[bis(2-hydroxypropyl)amino]methyl]phosphonate, 1,2-ethanediol, 1,1'-methylenebis[4-isocyanatobenzene], methyloxirane polymer with oxirane ether with 1,2,3-propanetriol (3:1), and 1,2,3-propanetriol (9CI) (CA INDEX NAME)

CM 1

CRN 38843-86-6

CMF C9 H22 N O5 P

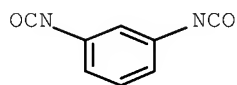


CM 2

CRN 26471-62-5

CMF C9 H6 N2 O2

CCI IDS

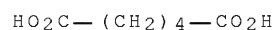


D1-Me

CM 3

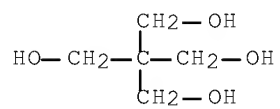
CRN 124-04-9

CMF C6 H10 O4



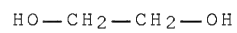
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CRN 115-77-5  
 CMF C5 H12 O4



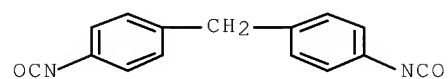
CM 5

CRN 107-21-1  
 CMF C2 H6 O2



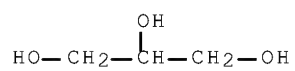
CM 6

CRN 101-68-8  
 CMF C15 H10 N2 O2



CM 7

CRN 56-81-5  
 CMF C3 H8 O3

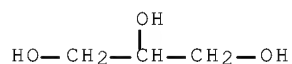


CM 8

CRN 9082-00-2  
 CMF C3 H8 O3 . 3 (C3 H6 O . C2 H4 O)x

CM 9

CRN 56-81-5  
 CMF C3 H8 O3

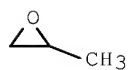


CM 10

CRN 9003-11-6  
 CMF (C3 H6 O . C2 H4 O)x  
 CCI PMS

CM 11

CRN 75-56-9  
 CMF C3 H6 O



CM 12

CRN 75-21-8  
 CMF C2 H4 O



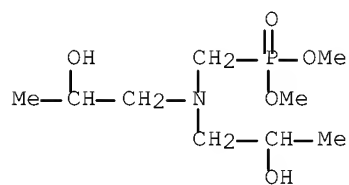
RN 118145-27-0 HCAPLUS  
 CN Hexanedioic acid, polymer with 2,2-bis(hydroxymethyl)-1,3-propanediol, dimethyl [[bis(2-hydroxypropyl)amino]methyl]phosphonate, 1,2-ethanediol, 1,1'-methylenebis[4-isocyanatobenzene], methyloxirane polymer with oxirane ether with 1,2,3-propanetriol (3:1), and 1,2,3-propanetriol (9CI) (CA INDEX NAME)

CM 1

CRN 38843-86-6

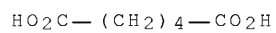
10/555,280

CMF C9 H22 N O5 P



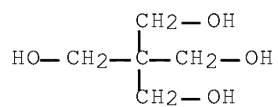
CM 2

CRN 124-04-9  
CMF C6 H10 O4



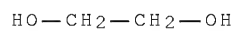
CM 3

CRN 115-77-5  
CMF C5 H12 O4



CM 4

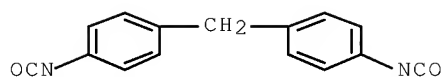
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CMF C2 H6 O2



CM 5

CRN 101-68-8  
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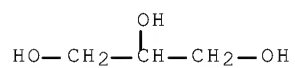




CM 6

CRN 56-81-5

CMF C3 H8 O3



CM 7

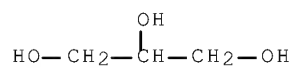
CRN 9082-00-2

CMF C3 H8 O3 . 3 (C3 H6 O . C2 H4 O) x

CM 8

CRN 56-81-5

CMF C3 H8 O3



CM 9

CRN 9003-11-6

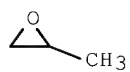
CMF (C3 H6 O . C2 H4 O) x

CCI PMS

CM 10

CRN 75-56-9

CMF C3 H6 O



CM 11

CRN 75-21-8

CMF C2 H4 O



IC ICM C08G018-32  
ICS C08L075-04; C09D003-72; C09D005-18  
CC 42-10 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 38  
IT 13397-24-5D, Gypsum, hydrated 21645-51-2, Aluminum  
hydroxide, uses and miscellaneous 118031-80-4  
118050-54-7 118050-55-8 118050-56-9  
118071-69-5 118145-26-9 118145-27-0  
(in fire-resistant intumescent comps.)

L38 ANSWER 10 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 1987:424982 HCAPLUS Full-text  
DOCUMENT NUMBER: 107:24982  
ORIGINAL REFERENCE NO.: 107:4215a, 4218a  
TITLE: Flameproofing absorbent substrates used in roofing  
and packaging  
INVENTOR(S): Von Bonin, Wulf; Ebneith, Harold  
PATENT ASSIGNEE(S): Bayer A.-G., Fed. Rep. Ger.  
SOURCE: Ger. Offen., 5 pp.  
CODEN: GWXXBX  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3528754	A1	19870219	DE 1985-3528754	19850810
EP 214422	A2	19870318	EP 1986-110089	19860723
EP 214422	A3	19880713		
R: BE, DE, GB, NL, SE				
DK 8603803	A	19870211	DK 1986-3803	19860808
PRIORITY APPLN. INFO.:			DE 1985-3528754	A 19850810

ED Entered STN: 25 Jul 1987

AB The flammability of absorbent substrates, especially from cellulose, are reduced by treatment with a mixture of a polyisocyanate and a P-containing condensate with  $\geq 2$  OH groups, prepared by condensation of an OH group-containing primary or secondary mono- and/or polyamine, carbonyl compds., and dialkyl phosphite, optionally alkoxyated. Equal parts of PAPI and (EtO)2P(O)CH2N(CH2CH2OH)2 in 50% CH2Cl2 were used to impregnate filter paper and dried to double the original weight Using a bunsen burner the treated filter paper did not ignite. The fireproofing was intact after 30 days immersion under water.

IT 93174-55-1  
(fireproofing agents, for absorbent cellulosic substrates)

RN 93174-55-1 HCAPLUS

CN Phosphonic acid, [[bis(2-hydroxyethyl)amino]methyl]-, diethyl ester,

10/555,280

polymer with polymethylenepolyphenylene isocyanate (9CI) (CA INDEX  
NAME)

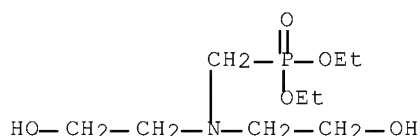
CM 1

CRN 9016-87-9  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 2781-11-5  
CMF C9 H22 N O5 P



IC ICM C09K021-14  
ICS D06M015-564; D06M015-667  
CC 43-2 (Cellulose, Lignin, Paper, and Other Wood Products)  
Section cross-reference(s): 58  
IT 93174-55-1  
(fireproofing agents, for absorbent cellulosic substrates)

L38 ANSWER 11 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 1987:218707 HCAPLUS Full-text  
DOCUMENT NUMBER: 106:218707  
ORIGINAL REFERENCE NO.: 106:35441a,35444a  
TITLE: Filler-containing intumescent materials and  
structural elements  
INVENTOR(S): Von Bonin, Wulf  
PATENT ASSIGNEE(S): Bayer A.-G., Fed. Rep. Ger.  
SOURCE: Ger. Offen., 7 pp.  
CODEN: GWXXBX  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3530358	A1	19870226	DE 1985-3530358	19850824
NO 8603206	A	19870225	NO 1986-3206	19860808
NO 172058	B	19930222		
NO 172058	C	19930602		
EP 217080	A1	19870408	EP 1986-111045	19860809
EP 217080	B1	19890125		
R: AT, BE, CH, DE, FR, GB, LI, NL, SE				
AT 40401	T	19890215	AT 1986-111045	19860809
PRIORITY APPLN. INFO.:			DE 1985-3530358	A 19850824

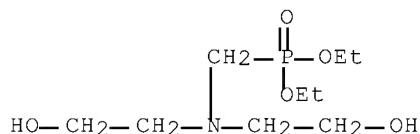
ED Entered STN: 26 Jun 1987

AB Massive and porous intumescent materials and structural elements which contain  $\text{Al}(\text{OH})_3$  and carbonate fillers, release water at  $>100^\circ$ , and are useful as structural fireproofing materials are prepared by conversion of polyisocyanates with P-containing OH compds., especially at least dihydric P-containing condensates from the condensation of OH-containing primary or secondary aliphatic, araliph., or heterocyclic mono and/or polyamines, carbonyl compds. and dialkylphosphites, optionally with subsequent oxalkylation, and optionally cyanuric acid and/or derivs. The fillers have average particle size  $>5 \mu$  and/or BET surface area  $<5 \text{ m}^2/\text{g}$ . Other auxiliaries and additives are optional. Intumescent boards were prepared from 30 weight parts polyisocyanate consisting of 4,4-diphenylmethanediisocyanate with isomers, .apprx.10% higher functional polynuclear components, and .apprx.31% isocyanates, 25 weight parts  $(\text{EtO})_2\text{POCH}_2(\text{C}_2\text{H}_4\text{OH})_2$  and 40 weight%  $\text{Al}(\text{OH})_3$ -based fillers. The boards had good intumescent properties at  $450^\circ$ .

IT 2781-11-5D, polymers with polyisocyanates 108527-05-5D  
 , polymers with polyisocyanates  
 (intumescent, building materials containing, for protection against fire)

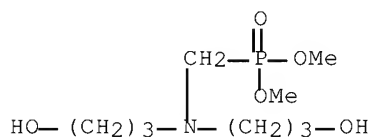
RN 2781-11-5 HCAPLUS

CN Phosphonic acid, P-[[bis(2-hydroxyethyl)amino]methyl]-, diethyl ester  
 (CA INDEX NAME)



RN 108527-05-5 HCAPLUS

CN Phosphonic acid, [[bis(3-hydroxypropyl)amino]methyl]-, dimethyl ester  
 (9CI) (CA INDEX NAME)



IC ICM C09K021-12

ICS C08L075-04; C08K003-22

CC 58-4 (Cement, Concrete, and Related Building Materials)

IT 75-13-8D, Isocyanic acid, esters, polymers with alkoxy aminoalkyl phosphates 2781-11-5D, polymers with polyisocyanates 108527-05-5D, polymers with polyisocyanates  
 (intumescent, building materials containing, for protection against fire)

L38 ANSWER 12 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1982:39553 HCAPLUS Full-text  
 DOCUMENT NUMBER: 96:39553  
 ORIGINAL REFERENCE NO.: 96:6493a, 6496a  
 TITLE: Corrosion inhibiting heat transfer liquid  
 INVENTOR(S): Newell, Richard G.; Perry, Dale C.  
 PATENT ASSIGNEE(S): Minnesota Mining and Manufacturing Co., USA  
 SOURCE: U.S., 7 pp. Cont.-in-part of U.S. 4,207,706.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
US 4293441	A	19811006	US 1979-29703	19790411
US 4202706	A	19800513	US 1979-19732	19790312
PRIORITY APPLN. INFO.:			US 1979-19732	A2 19790312

ED Entered STN: 12 May 1984

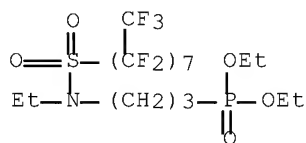
AB Corrosion of Al and Al-alloy surfaces by ethylene glycol [107-21-1] or propylene glycol solns. is decreased by adding ≤1% of fluoroaliph. sulfonamidophosphonic acid or its salts. The protected fluids are suitable for automobile radiators or solar heat exchangers. Thus, AA7072 [12675-84-2] Al alloy was immersed at 25° in a bath of 50 volume% aqueous ethylene glycol containing the chloride, sulfate, and bicarbonate salts. Corrosion c.d. in the linear polarization test was decreased an order of magnitude by the addition of 0.1% C8F17SO2N(C2H5)(CH2)3P(O)(OH)2, to values obtained with com. inhibited ethylene glycol antifreeze.

IT 71463-80-4P

(preparation and hydrolysis of)

RN 71463-80-4 HCAPLUS

CN Phosphonic acid, P-[3-[ethyl[(1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluorooctyl)sulfonyl]amino]propyl]-, diethyl ester (CA INDEX NAME)

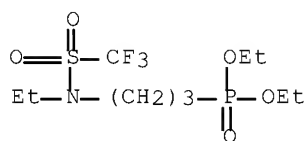


IT 74754-71-5P 74754-74-8P

(preparation and hydrolysis of)

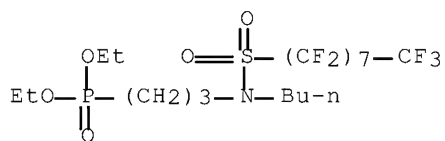
RN 74754-71-5 HCAPLUS

CN Phosphonic acid, [3-[ethyl[(trifluoromethyl)sulfonyl]amino]propyl]-, diethyl ester (9CI) (CA INDEX NAME)



RN 74754-74-8 HCAPLUS

CN Phosphonic acid, [3-[butyl[(heptadecafluorooctyl)sulfonyl]amino]propyl]-, diethyl ester (9CI) (CA INDEX NAME)

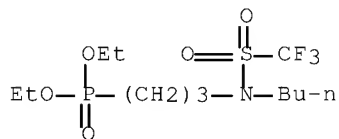


IT 74754-60-2P 74754-63-5P

(preparation and reaction with bromotrimethylsilane)

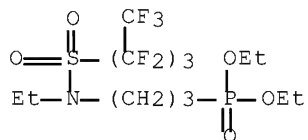
RN 74754-60-2 HCAPLUS

CN Phosphonic acid, [3-[butyl[(trifluoromethyl)sulfonyl]amino]propyl]-, diethyl ester (9CI) (CA INDEX NAME)



RN 74754-63-5 HCAPLUS

CN Phosphonic acid, [3-[ethyl[(nonafluorobutyl)sulfonyl]amino]propyl]-, diethyl ester (9CI) (CA INDEX NAME)



IC C09K003-00

INCL 252389000A

CC 56-10 (Nonferrous Metals and Alloys)

IT Aluminum alloys

(corrosion inhibitors for, organic phosphonic

acids, in heat exchangers with glycol solns.)

IT 107-21-1, uses and miscellaneous  
(corrosion inhibitor in, for aluminum alloys,  
organic phosphonic acids for)

IT 71463-78-0 74754-64-6 74754-66-8 74754-67-9 74754-72-6  
80220-62-8 80220-63-9  
(corrosion inhibitor, for aluminum alloys, in  
glycol solns.)

IT 11121-92-9 12616-84-1  
(corrosion inhibitors for,  
fluoroaliphaticphosphonic acids)

IT 7429-90-5, uses and miscellaneous 12675-84-2  
(corrosion inhibitors for, organic phosphonic  
acids, in heat exchangers with glycol solns.)

IT 71463-80-4P 74754-68-0P  
(preparation and hydrolysis of)

IT 74754-71-5P 74754-74-8P  
(preparation and hydrolysis of)

IT 74754-60-2P 74754-63-5P  
(preparation and reaction with bromotrimethylsilane)

IT 80237-32-7  
(surfactant, with corrosion inhibitors, for  
aluminum alloys in glycol solns.)

L38 ANSWER 13 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1981:577534 HCAPLUS Full-text

DOCUMENT NUMBER: 95:177534

ORIGINAL REFERENCE NO.: 95:29521a,29524a

TITLE: Study of the mechanism of hydrogen sulfide  
corrosion and development of inhibitors for the  
gas and petroleum industry

AUTHOR(S): Rozenfel'd, I. L.; Frolova, L. V.; Brusnikina, V.  
M.; Minenko, E. M.; Barkov, A. A.

CORPORATE SOURCE: Inst. Fiz. Khim., Moscow, USSR

SOURCE: Razrab. Mer Zashch. Met. Korroz., Mezhdunar.  
Nauchno-Tekh. Konf. Probl. SEV, 3rd (1980), Volume  
5, 78-81. Inst. Pretsizionnoi Mekh.: Warsaw, Pol.  
CODEN: 46BEAB

DOCUMENT TYPE: Conference

LANGUAGE: Russian

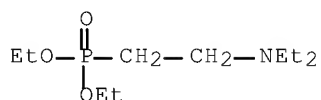
ED Entered STN: 12 May 1984

AB The relation was studied between the composition and structure of N-containing  
organic compds. and their capability of preventing overall corrosion, H  
absorption and corrosion cracking of steel in media containing H<sub>2</sub>S. The most  
effective inhibitors are the secondary amines. However, in the presence of  
addnl. functional groups, the effectiveness of the ternary amines increases.  
The mechanism was examined of H<sub>2</sub>S corrosion and H embrittlement. Some  
parameters were obtained characterizing the effect of inhibitors of the type  
IFKhANGAZ on the rate of inhibition of the reduction of H and on the  
effectiveness of its penetration into steel from a solution of 0.5% NaCl + H<sub>2</sub>S  
(1500 mg/L), containing 500 mg/L of inhibitor, at different pH values and  
potential of -600 mV.

IT 3958-23-4  
(corrosion inhibitor, for steel in hydrogen  
sulfide-containing media)

RN 3958-23-4 HCAPLUS

CN Phosphonic acid, [2-(diethylamino)ethyl]-, diethyl ester (6CI, 9CI)  
(CA INDEX NAME)



- CC 72-4 (Electrochemistry)  
 Section cross-reference(s): 51, 66
- ST hydrogen sulfide corrosion inhibitor amine; steel  
 corrosion inhibitor amine
- IT Corrosion inhibitors  
 (for steel in hydrogen sulfide-containing media)
- IT Amines, uses and miscellaneous  
 (secondary, corrosion inhibitors, for steel in  
 hydrogen sulfide-containing media)
- IT 100-37-8 109-89-7, uses and miscellaneous 121-44-8, uses and  
 miscellaneous 2917-91-1 3299-38-5 3958-23-4 5515-83-3  
 76748-78-2 79605-81-5  
 (corrosion inhibitor, for steel in hydrogen  
 sulfide-containing media)
- IT 7727-37-9D, compds.  
 (corrosion inhibitors, for steel in hydrogen  
 sulfide-containing media)

L38 ANSWER 14 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1981:106034 HCAPLUS Full-text

DOCUMENT NUMBER: 94:106034

ORIGINAL REFERENCE NO.: 94:17299a,17302a

TITLE: Study of inhibitors for the gas and oil industry

AUTHOR(S): Rozenfel'd, I. L.; Frolova, L. V.; Brusnikina, V.  
 M.

CORPORATE SOURCE: Inst. Fiz. Khim., Lvov, USSR

SOURCE: Fiziko-Khimichna Mekhanika Materialiv (1980),  
 16(4), 27-32

CODEN: FKMAJ; ISSN: 0430-6252

DOCUMENT TYPE: Journal

LANGUAGE: Russian

ED Entered STN: 12 May 1984

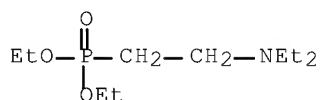
AB A class of corrosion inhibitors (IFKhANGAZ) is described which is suitable for  
 use in processing and transport of petroleum and gas containing H<sub>2</sub>S. For  
 example, IFKhANGAZ 1 [69899-55-4] protects steel in compressors for by-  
 product petroleum gas containing ≤2% H<sub>2</sub>S. The inhibitor is heat-stable at  
 ≤250°, it has low viscosity, low pour point (-75°), and high antifoam  
 activity; it is soluble in hydrocarbons and forms a stable emulsion with H<sub>2</sub>O.  
 Correlations were also obtained between structures of various amines and their  
 corrosion inhibiting activity in H<sub>2</sub>S-containing media, dioctylamine [1120-48-  
 5] was the most effective of these amines.

IT 3958-23-4  
 (corrosion-inhibiting activity of, in sour  
 natural gas and petroleum)

RN 3958-23-4 HCAPLUS

CN Phosphonic acid, [2-(diethylamino)ethyl]-, diethyl ester (6CI, 9CI)  
 (CA INDEX NAME)





CC 51-7 (Fossil Fuels, Derivatives, and Related Products)  
 Section cross-reference(s): 55  
 ST natural gas corrosion inhibition; hydrogen sulfide  
 corrosion inhibitor; dioctylamine steel  
 corrosion inhibitor; petroleum amine  
 corrosion inhibitor  
 IT Amines, uses and miscellaneous  
 (corrosion-inhibiting activity of, in sour  
 natural gas and petroleum)  
 IT 80904-18-3  
 (corrosion inhibitors, for equipment in contact  
 with sour natural gas and petroleum)  
 IT 100-37-8 109-89-7, uses and miscellaneous 111-92-2 121-44-8,  
 uses and miscellaneous 1120-48-5 1120-49-6 2044-21-5 2470-68-0  
 3299-38-5 3958-23-4 5515-83-3 76748-77-1 76748-78-2  
 (corrosion-inhibiting activity of, in sour  
 natural gas and petroleum)

L38 ANSWER 15 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1980:518892 HCAPLUS Full-text  
 DOCUMENT NUMBER: 93:118892  
 ORIGINAL REFERENCE NO.: 93:18939a,18942a  
 TITLE: Corrosion resistance treatment of aluminum with  
 N-alkylfluoroaliphatic sulfonamidophosphonic acids  
 and salts  
 INVENTOR(S): Newell, Richard G.; Perry, Dale C.  
 PATENT ASSIGNEE(S): Minnesota Mining and Manufacturing Co., USA  
 SOURCE: U.S., 6 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 4202706	A	19800513	US 1979-19732	19790312
US 4293441	A	19811006	US 1979-29703	19790411
PRIORITY APPLN. INFO.:			US 1979-19732	A2 19790312

ED Entered STN: 12 May 1984

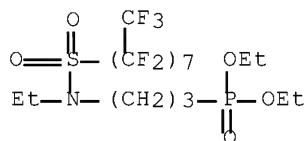
AB The surfaces of anodized or bare Al articles are protected from corrosion by treatment with title compds. of general formula  $\text{RSO}_2\text{NR}_1\text{ZP}(\text{O})(\text{OM})\text{OM}_1$ , where R = fluoroaliph. group,  $\text{R}_1$  = C1-C8 alkyl, Z = C1-C16 alkylene (or  $\text{NR}_1\text{Z}$  = azacyclic ring), and M and  $\text{M}_1$  (independently) = H or salt-forming cations. Thus, an Al panel (AA 5352, for automotive bright trim) was anodized and then sealed by immersion for 15 min in a bath of boiling deionized  $\text{H}_2\text{O}$  containing 0.05 g/L  $\text{C}_8\text{F}_{17}\text{SO}_2\text{Net}(\text{CH}_2)_3\text{P}(\text{O})(\text{OH})_2(\text{I})$  [71463-78-0]. Weight loss of the treated panel after 15 min at  $37^\circ$  in an acid bath containing 2% chromic and 3%  $\text{H}_3\text{PO}_4$  was 5.0 mg/dm<sup>2</sup>, as compared to 42.6 mg/dm<sup>2</sup> when I was omitted from the sealing step and 19.0 mg/dm<sup>2</sup> when  $\text{C}_8\text{F}_{17}\text{SO}_2\text{NH}(\text{CH}_2)_3\text{P}(\text{O})(\text{OH})_2$  at 0.5 g/L was used in place of I. The synthesis of I and several other corrosion inhibitors is described.

IT 71463-80-4P 74754-60-2P 74754-63-5P  
74754-71-5P 74754-74-8P

(preparation and hydrolysis of)

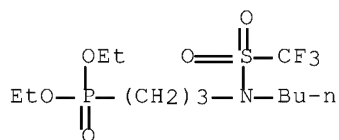
RN 71463-80-4 HCAPLUS

CN Phosphonic acid, P-[3-[ethyl[(1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluorooctyl)sulfonyl]amino]propyl]-, diethyl ester (CA INDEX NAME)



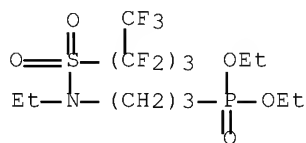
RN 74754-60-2 HCAPLUS

CN Phosphonic acid, [3-[butyl[(trifluoromethyl)sulfonyl]amino]propyl]-, diethyl ester (9CI) (CA INDEX NAME)



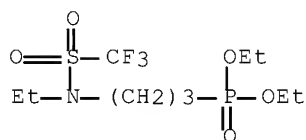
RN 74754-63-5 HCAPLUS

CN Phosphonic acid, [3-[ethyl[(nonafluorobutyl)sulfonyl]amino]propyl]-, diethyl ester (9CI) (CA INDEX NAME)

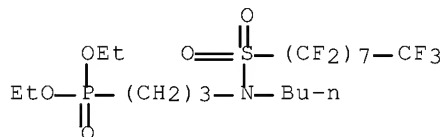


RN 74754-71-5 HCAPLUS

CN Phosphonic acid, [3-[ethyl[(trifluoromethyl)sulfonyl]amino]propyl]-, diethyl ester (9CI) (CA INDEX NAME)



RN 74754-74-8 HCAPLUS  
 CN Phosphonic acid, [3-[butyl[(heptadecafluorooctyl)sulfonyl]amino]propyl]-, diethyl ester (9CI) (CA INDEX NAME)



IC C25D011-24; C23F007-00

INCL 148006170

CC 56-8 (Nonferrous Metals and Alloys)

Section cross-reference(s): 23

ST aluminum alloy corrosion inhibitor; phosphoric  
 corrosion inhibitor aluminum; sulfonamide  
 corrosion inhibitor aluminum;  
 fluoroalkanesulfonamide corrosion inhibitor;  
 passivating agent aluminum alloy

IT Sulfonamides

(N-alkylperfluoroalkane-, phosphono group-containing, corrosion  
 inhibitors, for aluminum)

IT 71463-78-0 74754-69-1

(corrosion inhibitor, for aluminum, preparation and  
 use of)

IT 74754-61-3 74754-64-6 74754-66-8 74754-67-9 74754-72-6  
 74754-75-9

(corrosion inhibitor, for aluminum, preparation of)

IT 71463-80-4P 74754-60-2P 74754-63-5P

74754-68-0P 74754-71-5P 74754-74-8P

(preparation and hydrolysis of)

L38 ANSWER 16 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1980:133057 HCAPLUS Full-text

DOCUMENT NUMBER: 92:133057

ORIGINAL REFERENCE NO.: 92:21641a,21644a

TITLE: Esters of [N-(β-hydroxyethyl)-N-  
 benzylaminomethyl]phosphonic acid - inhibitors of  
 steel corrosion

AUTHOR(S): Shestakova, T. G.; Nifant'ev, E. E.; Runova, L.  
 M.; Bogatyreva, E. V.; Ronkov, V. I.

CORPORATE SOURCE: Mosk. Khim.-Tekhnol. Inst., Moscow, USSR

SOURCE: Deposited Doc. (1979), VINITI 728-79, 5 pp.

Avail.: VINITI

DOCUMENT TYPE: Report

LANGUAGE: Russian

ED Entered STN: 12 May 1984

AB The title phosphonates PhCH<sub>2</sub> N(CH<sub>2</sub>CH<sub>2</sub>OH)CH<sub>2</sub> P(O) (OR)<sub>2</sub> (R = Me (I), Et, iso-Bu) were tested as steel-corrosion inhibitors in 5-10 N HCl at 20°. The coefficient of protective action increased with increasing ester concentration. Best results were obtained with I.

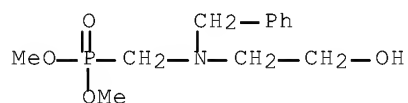
IT 73215-14-2 73215-15-3 73215-16-4

(corrosion inhibitor, for steel in hydrochloric

acid)

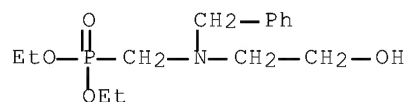
RN 73215-14-2 HCAPLUS

CN Phosphonic acid, [[(2-hydroxyethyl)(phenylmethyl)amino]methyl]-, dimethyl ester (9CI) (CA INDEX NAME)



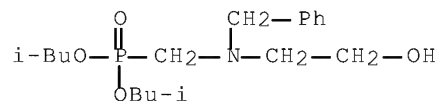
RN 73215-15-3 HCAPLUS

CN Phosphonic acid, [[(2-hydroxyethyl)(phenylmethyl)amino]methyl]-, diethyl ester (9CI) (CA INDEX NAME)



RN 73215-16-4 HCAPLUS

CN Phosphonic acid, [[(2-hydroxyethyl)(phenylmethyl)amino]methyl]-, bis(2-methylpropyl) ester (9CI) (CA INDEX NAME)



CC 55-9 (Ferrous Metals and Alloys)

ST steel corrosion inhibitor phosphonate;  
hydrochloric corrosion steel inhibitor

IT Corrosion inhibitors

(phosphonates, for steel, in hydrochloric acid)

IT 73215-14-2 73215-15-3 73215-16-4

(corrosion inhibitor, for steel in hydrochloric acid)

IT 12597-69-2, uses and miscellaneous

(corrosion inhibitors for, phosphonate)

L38 ANSWER 17 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1978:509959 HCAPLUS Full-text

DOCUMENT NUMBER: 89:109959

ORIGINAL REFERENCE NO.: 89:16957a,16960a

TITLE: N-Alkylated aminoalkylphosphonates

INVENTOR(S): Hardy, Thomas A.

PATENT ASSIGNEE(S): Stauffer Chemical Co., USA

SOURCE: U.S., 4 pp.

CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 4083897	A	19780411	US 1976-740585	19761110
PRIORITY APPLN. INFO.:			US 1976-740585	19761110

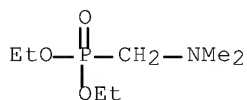
ED Entered STN: 12 May 1984

AB The title compds., [(RO)2P(O)CR1R2]nNR3R42-n (I, R, R3, R4 = C1-5 alkyl; R1, R2 = H, C1-5 alkyl; n = 1, 2) were prepared by condensation of (RO)2P(O)H with R1R2CO and HNR3R4. Thus, 1 mol (EtO)2P(O)H and 1 mol Me2NH were added to 1.05 mol H2CO to give 96% (EtO)2P(O)CH2NMe2. The 2:1:2 reaction of (EtO)2P(O)H-MeNH2-H2CO gave [(EtO)2P(O)CH2]2NMe. I are useful as flame retardants in plastics, urethanes, and textiles and as lubricant additives with good corrosion inhibiting, anti-erosion and extreme pressure properties.

IT 3958-40-5P 67278-71-1P  
 (preparation of)

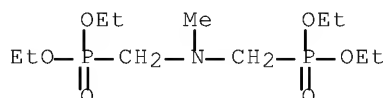
RN 3958-40-5 HCAPLUS

CN Phosphonic acid, P-[(dimethylamino)methyl]-, diethyl ester (CA INDEX NAME)



RN 67278-71-1 HCAPLUS

CN Phosphonic acid, P,P'-[(methylimino)bis(methylene)]bis-, P,P,P',P'-tetraethyl ester (CA INDEX NAME)



IC C07F009-40

INCL 260970000

CC 29-7 (Organometallic and Organometalloidal Compounds)

ST phosphite amine formaldehyde reaction; phosphonate aminoalkane; aminoalkanephosphonate; flame retardant aminoalkanesulfonate; plastic fireproofing aminoalkanephosphonate; urethane flame retardant aminoalkanephosphonate; textile flame retardant aminoalkanephosphonate; lubricant additive flame retardant; corrosion inhibitor flame retardant

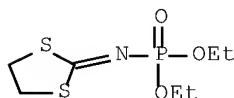
IT Corrosion inhibitors

Lubricating oil additives

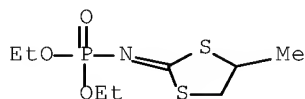
(aminoalkanephosphonates as)

IT 3958-40-5P 67278-71-1P  
(preparation of)

L38 ANSWER 18 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1977:566107 HCAPLUS Full-text  
 DOCUMENT NUMBER: 87:166107  
 ORIGINAL REFERENCE NO.: 87:26255a,26258a  
 TITLE: Determination of citrullin and ciulin residues in  
 vegetables by thin-layer chromatography  
 AUTHOR(S): Safa, Muhammed Rifaat; Kosmatyi, E. S.; Chupova,  
 I. N.  
 CORPORATE SOURCE: Ukr. Nauchno-Issled. Inst. Zashch. Rast., Kiev,  
 USSR  
 SOURCE: Fiziologiya i Biokhimiya Kul'turnykh Rastenii  
 (1977), 9(4), 437-41  
 CODEN: FBKRAT; ISSN: 0532-9310  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian  
 ED Entered STN: 12 May 1984  
 AB A procedure is suggested for determining citrullin [950-10-7] and ciulin (O,O-  
 diethylphosphonylimino-1,3-dithiolane) [947-02-4] residues in tomatoes,  
 potato tubers, and ciulin alone in wheat plants by chromatog. on layers of  
 alumina-silica gel KSK (1:1) with gypsum binder and hexane-Me2CO (1:1)  
 solvent. The sensitivity was 0.1 mg/kg.  
 IT 947-02-4 950-10-7  
 (determination of, in vegetables)  
 RN 947-02-4 HCAPLUS  
 CN Phosphoramidic acid, N-1,3-dithiolan-2-ylidene-, diethyl ester (CA  
 INDEX NAME)



RN 950-10-7 HCAPLUS  
 CN Phosphoramidic acid, N-(4-methyl-1,3-dithiolan-2-ylidene)-, diethyl  
 ester (CA INDEX NAME)



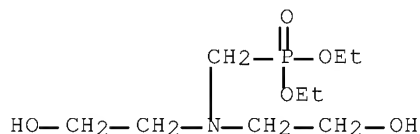
CC 17-1 (Foods)  
 Section cross-reference(s): 5  
 IT 947-02-4 950-10-7  
 (determination of, in vegetables)

L38 ANSWER 19 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1975:550868 HCAPLUS Full-text

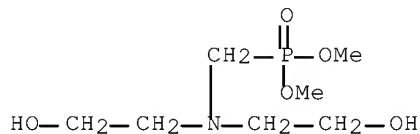
DOCUMENT NUMBER: 83:150868  
 ORIGINAL REFERENCE NO.: 83:23695a,23698a  
 TITLE: Metal corrosion inhibitor  
 INVENTOR(S): Tada, Fusao; Matsumoto, Fuminori; Hatanaka, Tsutomu  
 PATENT ASSIGNEE(S): Sakai Chemical Industry Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 49130338	A	19741213	JP 1973-44488	19730419
PRIORITY APPLN. INFO.:			JP 1973-44488	A 19730419

ED Entered STN: 12 May 1984  
 AB Dialkyl N,N-bis(hydroxyethyl)aminomethylphosphonates or their hydrolysis products (RO)2P(O)CH2N(C2H4OH)2 (I) (R = H, Me, Et) are added to water to prevent corrosion of metals being contacted with the water. Thus, a cold-rolled mild steel [12597-69-2] sheet was immersed in 0.2% aqueous I (R = Et) [2781-11-5] solution for 3 min. and kept in air. The steel sheet was not corroded even after 6 hr.  
 IT 2781-11-5 2883-51-4  
 (corrosion inhibitor, for cold-rolled mild steel sheets in water)  
 RN 2781-11-5 HCAPLUS  
 CN Phosphonic acid, P-[[bis(2-hydroxyethyl)amino]methyl]-, diethyl ester (CA INDEX NAME)



RN 2883-51-4 HCAPLUS  
 CN Phosphonic acid, [[bis(2-hydroxyethyl)amino]methyl]-, dimethyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



INCL 12A82  
 CC 55-9 (Ferrous Metals and Alloys)  
 Section cross-reference(s): 61

ST steel corrosion inhibition  
 IT Corrosion inhibitors  
 (for cold-rolled mild steel sheets in water)  
 IT 2781-11-5 2883-51-4 5994-60-5  
 (corrosion inhibitor, for cold-rolled mild  
 steel sheets in water)

L38 ANSWER 20 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1975:444864 HCAPLUS Full-text  
 DOCUMENT NUMBER: 83:44864  
 ORIGINAL REFERENCE NO.: 83:7115a,7118a  
 TITLE: Functional group-containing organophosphoric acid  
 esters as adhesive or coatings for metal  
 INVENTOR(S): Koetzsch, Hans J.; Seiler, Claus D.; Vahlensieck,  
 Hans J.  
 PATENT ASSIGNEE(S): Dynamit Nobel A.-G., Fed. Rep. Ger.  
 SOURCE: Ger. Offen., 38 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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DE 2344197	A1	19750327	DE 1973-2344197	19730901
DE 2310136	A1	19740905	DE 1973-2310136	19730301
IT 1003650	B	19760610	IT 1974-48915	19740301
FR 2242483	A1	19750328	FR 1974-29578	19740829
NL 7411567	A	19750304	NL 1974-11567	19740830
US 4029679	A	19770614	US 1974-502125	19740830
GB 1489243	A	19771019	GB 1974-8652	19740830
GB 1489244	A	19771019	GB 1974-8887	19740830
GB 1489245	A	19771019	GB 1974-8888	19740830
GB 1489246	A	19771019	GB 1974-8889	19740830
GB 1489241	A	19771019	GB 1974-38107	19740830
GB 1489242	A	19771019	GB 1977-8651	19740830
GB 1489247	A	19771019	GB 1977-8890	19740830
JP 50051435	A	19750508	JP 1974-100802	19740902
US 4048374	A	19770913	US 1975-590642	19750626
PRIORITY APPLN. INFO.:			DE 1973-2310136	A 19730301
			DE 1973-2344197	A 19730901
			GB 1974-38107	A 19740830
			US 1974-502125	A3 19740830

ED Entered STN: 12 May 1984

AB Phosphonates substituted with epoxide, halogen, alkene, carboxylate, amine, OH, SH, or alkylthio groups are useful as corrosion inhibitors, shop primers, and coating couplers for metals. Thus, addition over 1 hr of a mixture of HPO(OEt)<sub>2</sub> [762-04-9] 69, allyl glycidyl ether [106-92-3] 114, and tert-Bu peroxy-2-ethylhexanoate 21.6 g to 76 g HPO(OEt)<sub>2</sub> stirred at 140° and stirring 40 min at 140° gives 227 g diethyl [3-(glycidyloxy)propyl]phosphonate (I) [12597-69-2]. Steel [12597-69-2] plate heated to 220° and sprayed with 4 g I/m<sup>2</sup> as a 50% solution in 90% EtOH remains rust-free after 93 days outdoor weathering or exposure to 3% aqueous NaCl, while steel sprayed only with EtOH is rusted after exposure.

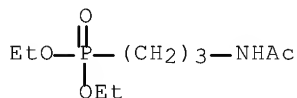
IT 54008-28-5



(corrosion inhibitors, for steel)

RN 54008-28-5 HCAPLUS

CN Phosphonic acid, [3-(acetylamino)propyl]-, diethyl ester (9CI) (CA INDEX NAME)

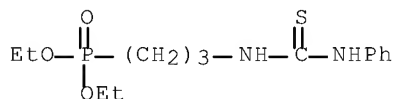


IT 55850-85-6P

(preparation of)

RN 55850-85-6 HCAPLUS

CN Phosphonic acid, [3-[[ (phenylamino)thioxomethyl]amino]propyl]-, diethyl ester (9CI) (CA INDEX NAME)



IC C07F; C23F

CC 42-10 (Coatings, Inks, and Related Products)

Section cross-reference(s): 29, 55

ST phosphonate corrosion inhibitor; steel  
 corrosion inhibitor; coating phosphonate  
 anticorrosion; glycidyloxypropylphosphonate corrosion  
 inhibitor; phosphite reaction allyl ether

IT Corrosion inhibitors

(phosphonates, for steel)

IT 12597-69-2, uses and miscellaneous

(corrosion inhibitors for, phosphonates as)

IT 1068-07-1 1186-23-8 4402-24-8 12597-69-2, uses and miscellaneous

16165-68-7 17989-06-9 50655-63-5 54008-28-5 55849-69-9

55849-70-2 55850-78-7 55850-79-8 55850-80-1 55850-81-2

55850-83-4 55850-84-5 55850-86-7 55850-87-8

(corrosion inhibitors, for steel)

IT 55850-85-6P

(preparation of)

L38 ANSWER 21 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1974:70956 HCAPLUS Full-text

DOCUMENT NUMBER: 80:70956

ORIGINAL REFERENCE NO.: 80:11459a,11462a

TITLE: Substituted diamines

INVENTOR(S): Mitchell, Robert Stephen

PATENT ASSIGNEE(S): Monsanto Co.

SOURCE: Ger. Offen., 51 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2324763	A1	19731129	DE 1973-2324763	19730516
US 3723347	A	19730327	US 1972-254008	19720517
US 3809654	A	19740507	US 1972-254246	19720517
IT 987496	B	19750220	IT 1973-24168	19730516
PRIORITY APPLN. INFO.:			US 1972-254008	A 19720517
			US 1972-254246	A 19720517
			US 1972-254247	A 19720517

ED Entered STN: 12 May 1984

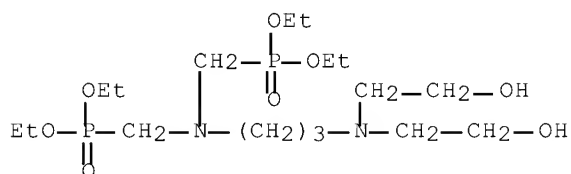
AB Chelating compds., [[[[bis(hydroxyalkyl)amino]alkyl]imino]dimethylene]-diphosphonic acids, salts, and esters [(HOX(OZ)n)2NQn[CH2P-(O)(OR)(OR1)]2 [X = (CH2)2, (CH2)3; Z = (CH2)2, (CH2)3; n = 0, 1, 3, 5, 10; Q = (CH2)2-6, 1,2-cyclohexylene, 1,4-cyclohexylenedimethylene; R = R1 = H, Bu, Et; R = H, R1 = Na, NH4, 1/2Zn], were prepared by reacting the corresponding amines with HCHO and H3PO4, then converting the acid moieties as desired. The products were corrosion inhibitors.

TT 51575-41-8

(corrosion-inhibiting)

RN 51575-41-8 HCAPLUS

Phosphonic acid, [[[3-[bis(2-hydroxyethyl)amino]propyl]imino]bis(methylene)]bis-, tetraethyl ester (9CI) (CA INDEX NAME)



IC C07F; C23F

CC 29-7 (Organometallic and Organometalloidal Compounds)

ST phosphonic acid aminoalkyl corrosion inhibitor;

amine alkylenedi phosphonoalkyl corrosion inhibitor

; chelating agent hydroxyalkyldiamine phosphonalkyl

IT Chelating agents and Complexing agents

### Corrosion inhibitors

(hydroxylated [(aminoalkyl)imino]dimethylene)diphosphonic acids  
as)

IT Amines, preparation

(hydroxylated phosphonoalkyl alkane di-, corrosion-inhibiting)

IT 42551-48-4 42551-49-5 42551-50-8 42551-53-1 51575-29-2

51575-30-5      51575-31-6      51575-32-7      51575-33-8      51575-34-9

51575-35-0      51575-36-1      51575-37-2      51575-38-3      51575-39-4

51575-40-7 51575-41-8 51684-93-6 51684-94-7 51684-95-8

51 684-96-9

(corrosion-inhibiting)

L38 ANSWER 22 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1974:9773 HCAPLUS Full-text

DOCUMENT NUMBER: 80:9773

ORIGINAL REFERENCE NO.: 80:1589a,1592a

TITLE: Effect of mono- and dialkoxyphenyl-N-substituted sulfonamides on the hydrogen absorption of steel in an acid medium

AUTHOR(S): Orudzheva, I. M.; Dzhaifarov, Z. I.; Polyudova, V. P.; Zeinalov, S. D.; Beloglazov, S. M.; Mamedova, P. S.

CORPORATE SOURCE: Inst. Khim. Prisadok, Baku, USSR

SOURCE: Zashchita Metallov (1973), 9(5), 600-3

CODEN: ZAMEA9; ISSN: 0044-1856

DOCUMENT TYPE: Journal

LANGUAGE: Russian

ED Entered STN: 12 May 1984

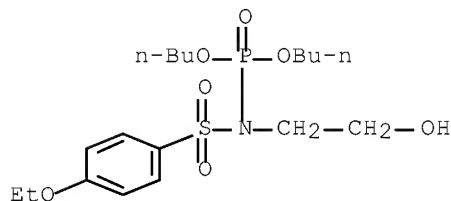
AB Reduction of plasticity in terms of the number of revolutions withstood by a 100 mm long, 0.5 mm diameter, steel wire before breaking in a special twisting apparatus (tensile stress 1.5 kg) was used as an index of H absorption. In the absence of inhibitors and 5 min cathodic polarization at c.d. 5, 10, 20, and 50 mA/cm<sup>2</sup>, the H absorbed was sufficient to cause a complete loss of plasticity (the original wire withstood 62 revolutions while the test wires did not withstand even 1 revolution). The inhibition by the title sulfonamides (I) was mainly due to the N of amide group with a high electronic d. Substitution of MeO by EtO, introduction of a 2nd alkoxy group in the mol., and the substitution of amide H by a phosphono ester greatly suppressed the H absorption. The excellent inhibition afforded by [(p-ethoxyphenyl)thio]acetic acid (II) was due to the presence of divalent S with unpaired electrons in the mol. 2,5-Dimethoxybenzenesulfonomorpholide and II were very stable at 0.005 mole/l. Increasing the H<sub>2</sub>SO<sub>4</sub> concentration to 2N in the mixture (H<sub>2</sub>SO<sub>4</sub> + 10 or 20 mg H<sub>2</sub>SeO<sub>3</sub>/l.) did not greatly affect the inhibition of the I. At constant c.d., the cathode potential in the presence of I was displaced in a neg. direction, which suggested difficulty of cathodic restoration of H ions.

IT 51038-87-0

(in hydrogen embrittlement prevention, of steel)

RN 51038-87-0 HCAPLUS

CN Phosphoramidic acid, [(4-ethoxyphenyl)sulfonyl](2-hydroxyethyl)-, dibutyl ester (9CI) (CA INDEX NAME)



CC 77-7 (Electrochemistry)

IT Corrosion inhibitors

(alkoxybenzenesulfonamides, for steel)

IT 32176-27-5 32176-33-3 38561-25-0 51038-86-9 51038-87-0

51094-45-2

(in hydrogen embrittlement prevention, of steel)

L38 ANSWER 23 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1973:488137 HCAPLUS Full-text

DOCUMENT NUMBER: 79:88137

ORIGINAL REFERENCE NO.: 79:14275a,14278a

TITLE: Identification and determination of demuphos in water

AUTHOR(S): Rezunencko, O. A.; Tret'yak, M. G.; Shokol, V. A.

CORPORATE SOURCE: Inst. Org. Khim., Kiev, USSR

SOURCE: Khimiya v Sel'skom Khozyaistve (1963-1987) (1973), 10(5), 364-5

CODEN: KSKZAN; ISSN: 0023-1185

DOCUMENT TYPE: Journal

LANGUAGE: Russian

ED Entered STN: 12 May 1984

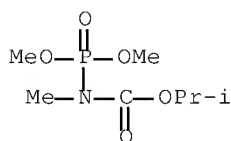
AB Chromatog. and colorimetric methods were developed for the qual. identification and quant. determination of demuphos [2231-31-4] in aqueous solns. Since C6H6 interfered with the determination, demuphos was extracted with CCl4 from the aqueous solution which had been saturated with NaCl. The qual. identification of demuphos in water used a nonactivated Al2O3 thin-layer containing 16.5% gypsum and a 3:2 hexane-acetone mixture for the developing solvent. The sensitivity limit was .sim. 7.5 .tim. 10-8 g demuphos, and the Rf value was 0.53. For the quant. determination, demuphos was oxidized to phosphate with K2S2O8, and the phosphate was determined colorimetrically as the phosphomolybdate complex.

IT 2231-31-4

(detection and determination of, in water)

RN 2231-31-4 HCAPLUS

CN Carbamic acid, (dimethoxyphosphinyl)methyl-, 1-methylethyl ester (9CI)  
(CA INDEX NAME)



CC 5-1 (Agrochemicals)

IT 2231-31-4

(detection and determination of, in water)

L38 ANSWER 24 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1973:478435 HCAPLUS Full-text

DOCUMENT NUMBER: 79:78435

ORIGINAL REFERENCE NO.: 79:12713a,12716a

TITLE: Fungicidal phosphorylated thioureas

INVENTOR(S): Mihailovski, Alexander; Baker, Don Robert

PATENT ASSIGNEE(S): Stauffer Chemical Co.

SOURCE: Ger. Offen., 20 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.

KIND

DATE

APPLICATION NO.

DATE

DE 2263599	A1	19730705	DE 1972-2263599	19721227
US 3767734	A	19731023	US 1971-213714	19711229
CA 985695	A1	19760316	CA 1972-158982	19721215
GB 1373979	A	19741113	GB 1972-59110	19721221
ZA 7209079	A	19730926	ZA 1972-9079	19721227
FR 2166135	A1	19730810	FR 1972-46641	19721228
BR 7209213	D0	19730913	BR 1972-9213	19721228
BE 793552	A1	19730629	BE 1972-126026	19721229
NL 7217825	A	19730703	NL 1972-17825	19721229
JP 48072334	A	19730929	JP 1973-4391	19721229
IT 973339	B	19740610	IT 1972-34039	19721229
CH 568014	A5	19751031	CH 1972-19030	19721229
US 3781326	A	19731225	US 1973-336111	19730226
US 3808252	A	19740430	US 1973-335606	19730226
PRIORITY APPLN. INFO.:			US 1971-213714	A 19711229

ED Entered STN: 12 May 1984

GI For diagram(s), see printed CA Issue.

AB Two title compds. (I, R = OEt, R1 = OEt or Et, X = O, R2 = OMe) were prepared by reaction of o-(H2N)2C6H4 with RR1P(X)Cl followed by reaction with R1CONS. These I as well as 22 other I (addnl. R = Et; X = S; R2 = OEt, OPr, Me, SEt, OBu, OCH2CHMe2, OCHMe2) were used against various plant-pathol. fungi, especially *Uromyces phaseoli* and *Erysiphe polygoni*, and against *Escherichia coli* and *Staphylococcus aureus*.

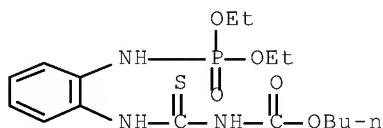
IT 42793-32-8 42864-58-4 42864-59-5

42864-60-8 42864-67-5 42864-72-2

(bactericidal and fungicidal activity of)

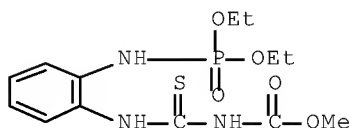
RN 42793-32-8 HCAPLUS

CN Carbamic acid, [[[2-[(diethoxyphosphinyl)amino]phenyl]amino]thioxomethyl]-, butyl ester (9CI) (CA INDEX NAME)



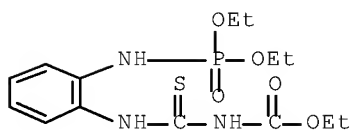
RN 42864-58-4 HCAPLUS

CN Carbamic acid, [[[2-[(diethoxyphosphinyl)amino]phenyl]amino]thioxomethyl]-, methyl ester (9CI) (CA INDEX NAME)



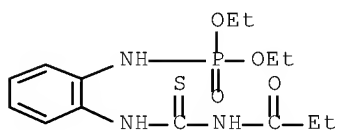
RN 42864-59-5 HCAPLUS

CN Carbamic acid, [[[2-[(diethoxyphosphinyl)amino]phenyl]amino]thioxomethyl]-, ethyl ester (9CI) (CA INDEX NAME)



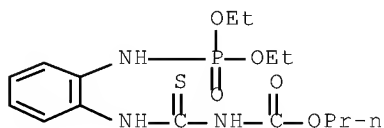
RN 42864-60-8 HCAPLUS

CN Phosphoramidic acid, [2-[[[(1-oxopropyl)amino]thioxomethyl]amino]phenyl]-, diethyl ester (9CI) (CA INDEX NAME)



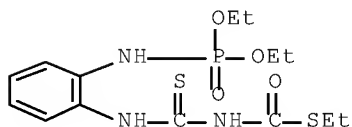
RN 42864-67-5 HCAPLUS

CN Carbamic acid, [[2-[(diethoxyphosphinyl)amino]phenyl]amino]thioxomethyl]-, propyl ester (9CI) (CA INDEX NAME)



RN 42864-72-2 HCAPLUS

CN Carbamothioic acid, [[2-[(diethoxyphosphinyl)amino]phenyl]amino]thioxomethyl]-, S-ethyl ester (9CI) (CA INDEX NAME)

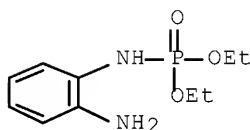


IT 42864-75-5

(reaction of, with methoxycarbonyl isothiocyanate)

RN 42864-75-5 HCAPLUS

CN Phosphoramidic acid, (2-aminophenyl)-, diethyl ester (9CI) (CA INDEX NAME)



IC C09F; C07F; A01N  
 CC 25-21 (Noncondensed Aromatic Compounds)  
 Section cross-reference(s): 5  
 IT Hydraulic fluids  
 (additives, tris[[methoxycarbonyl]alkyl]phenyl] phosphates)  
 IT 42793-30-6 42793-31-7 42793-32-8 42864-57-3  
 42864-58-4 42864-59-5 42864-60-8  
 42864-61-9 42864-62-0 42864-63-1 42864-64-2 42864-65-3  
 42864-66-4 42864-67-5 42864-68-6 42864-69-7 42864-70-0  
 42864-71-1 42864-72-2 42864-73-3 42864-74-4 42973-42-2  
 42973-43-3 42973-44-4  
 (bactericidal and fungicidal activity of)  
 IT 42864-75-5 42864-77-7  
 (reaction of, with methoxycarbonyl isothiocyanate)

L38 ANSWER 25 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1972:422586 HCAPLUS Full-text  
 DOCUMENT NUMBER: 77:22586  
 ORIGINAL REFERENCE NO.: 77:3758h,3759a  
 TITLE: Imidazoline phosphoramides as corrosion  
 inhibitors and water clarifiers  
 INVENTOR(S): Redmore, Derek  
 PATENT ASSIGNEE(S): Petrolite Corp.  
 SOURCE: U.S., 12 pp. Division of U.S. 3,524,908 (CA  
 73;98414t).  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3654300	A	19720404	US 1970-26439	19700407
PRIORITY APPLN. INFO.:			US 1970-26439	A 19700407

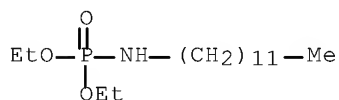
ED Entered STN: 12 May 1984  
 GI For diagram(s), see printed CA Issue.  
 AB Division of U.S. 3,524,908 (CA 73: 98414t). The title phosphoramides were effective corrosion inhibitors, especially against oil-well brines, either aerobic or anaerobic. Thus, SAE-1020 steel coupons were exposed for 7 days at 115°F to a H<sub>2</sub>S-saturated artificial sea water containing 4-16 ppm (EtO)<sub>2</sub>P(O)NH(CH<sub>2</sub>CH<sub>2</sub>NH)<sub>2</sub>H-HCl with 82% protection compared with 27-70% for com. inhibitors having the same concentration Other phosphoramides also gave better protection than the com. products. The compds. (27), also useful as water clarifiers, were prepared by treating phosphorous acid esters with imidazolines, amines, or polyamines. Thus, 0.1 mole (EtO)<sub>2</sub>P(O)H in CCl<sub>4</sub> was treated with 1-(2-aminoethyl)-2-octadecyl-2-imidazoline for 0.5 hr to give 90% I.  
 IT 29271-27-0 29417-00-3 34008-16-7  
 34008-18-9

10/555,280

(corrosion inhibitors and flocculating agents)

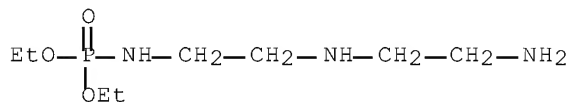
RN 29271-27-0 HCAPLUS

CN Phosphoramidic acid, dodecyl-, diethyl ester (8CI, 9CI) (CA INDEX NAME)



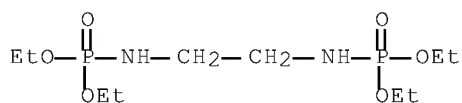
RN 29417-00-3 HCAPLUS

CN Phosphoramidic acid, [2-[(2-aminoethyl)amino]ethyl]-, diethyl ester, monohydrochloride (8CI, 9CI) (CA INDEX NAME)



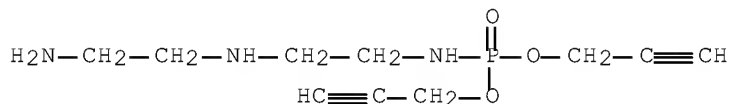
RN 34008-16-7 HCAPLUS

CN Phosphoramidic acid, N,N'-1,2-ethanediylbis-, P,P,P',P'-tetraethyl ester (CA INDEX NAME)



RN 34008-18-9 HCAPLUS

CN Phosphoramidic acid, [2-[(2-aminoethyl)amino]ethyl]-, di-2-propynyl ester, monohydrochloride (8CI, 9CI) (CA INDEX NAME)



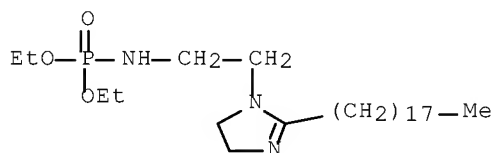


IT 33050-97-4 37097-41-9 37097-42-0  
 37097-44-2 37097-45-3 37097-46-4  
 37097-47-5

(flocculating agents)

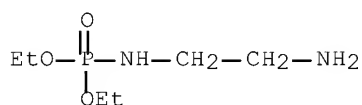
RN 33050-97-4 HCAPLUS

CN Phosphoramidic acid, [2-(4,5-dihydro-2-octadecyl-1H-imidazol-1-yl)ethyl]-, diethyl ester (9CI) (CA INDEX NAME)



RN 37097-41-9 HCAPLUS

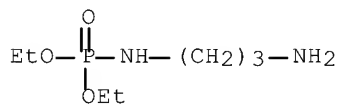
CN Phosphoramidic acid, (2-aminoethyl)-, diethyl ester, monohydrochloride (9CI) (CA INDEX NAME)



● HCl

RN 37097-42-0 HCAPLUS

CN Phosphoramidic acid, (3-aminopropyl)-, diethyl ester, monohydrochloride (9CI) (CA INDEX NAME)

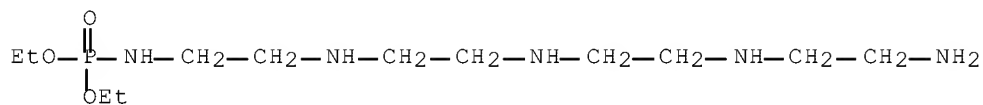


● HCl

RN 37097-44-2 HCAPLUS

CN Phosphoramidic acid, [2-[[2-[[2-[(2-aminoethyl)amino]ethyl]amino]ethyl]amino]ethyl]-, diethyl ester, monohydrochloride (9CI) (CA INDEX NAME)

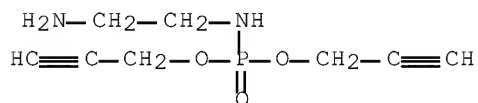
10/555,280



● HCl

RN 37097-45-3 HCAPLUS

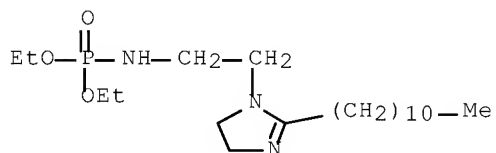
CN Phosphoramidic acid, (2-aminoethyl)-, di-2-propynyl ester, monohydrochloride (9CI) (CA INDEX NAME)



● HCl

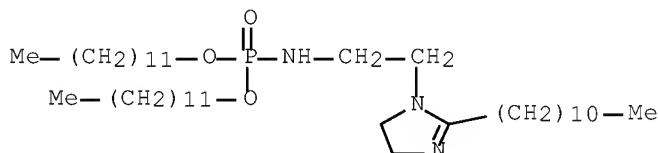
RN 37097-46-4 HCAPLUS

CN Phosphoramidic acid, [2-(4,5-dihydro-2-undecyl-1H-imidazol-1-yl)ethyl]-, diethyl ester (9CI) (CA INDEX NAME)



RN 37097-47-5 HCAPLUS

CN Phosphoramidic acid, [2-(4,5-dihydro-2-undecyl-1H-imidazol-1-yl)ethyl]-, didodecyl ester, monohydrochloride (9CI) (CA INDEX NAME)



● HCl

IC C07D

INCL 260309600

CC 51-13 (Petroleum, Petroleum Derivatives, and Related Products)  
 Section cross-reference(s): 61  
 ST imidazoline phosphoramidate corrosion inhibitor;  
 water clarifier imidazoline phosphoramidate; petroleum well brine  
 corrosion inhibitor  
 IT Petroleum recovery  
 (by flooding, with water, corrosion inhibitors  
 for)  
 IT Corrosion inhibitors  
 Flocculating agents  
 (phosphoramides)  
 IT Amines, compounds  
 (reaction products with dialkyl phosphonates, corrosion  
 inhibitors and flocculating agents)  
 IT 7264-96-2 13598-36-2D, Phosphonic acid, dialkyl esters, reaction  
 products with amines 29271-27-0 29417-00-3  
 34008-16-7 34008-18-9 37097-38-4 37187-95-4D,  
 Poly(oxy-1,2-ethanediyl),  $\alpha$ -hydro- $\omega$ -hydroxy-, phosphonate,  
 reaction products with amines  
 (corrosion inhibitors and flocculating agents)  
 IT 33050-97-4 37097-41-9 37097-42-0  
 37097-43-1 37097-44-2 37097-45-3  
 37097-46-4 37097-47-5  
 (flocculating agents)

L38 ANSWER 26 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1971:519870 HCAPLUS Full-text

DOCUMENT NUMBER: 75:119870

ORIGINAL REFERENCE NO.: 75:18919a,18922a

TITLE: Use of phosphoramides as corrosion  
 inhibitors

INVENTOR(S): Redmore, Derek

PATENT ASSIGNEE(S): Petrolite Corp.

SOURCE: U.S., 11 pp. Division of U.S. 3,524,908 (CA  
 73;98414t).

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 3591330	A	19710706	US 1969-867943	19691020
PRIORITY APPLN. INFO.:			US 1969-867943	A 19691020

ED Entered STN: 12 May 1984

AB Phosphoramides (RO)2P(O)NR1R2 (i.e., phosphoramidates) (I) are used as  
 corrosion inhibitors for steel in synthetic sea water-H2S or in air-saturated  
 brines and as clarifiers for aqueous suspensions. Thus, (RO)2P(O)H [R = Et,  
 Bu, C12H25, 2-propynyl, poly(oxyalkylene)] was treated in CCl4 with R1R2NH (R1  
 = 2-[(2-aminoethyl)amino]ethyl, R2 = H; R1 = dodecyl, R2 = H; R1 = 2-(2-  
 octadecyl-2-imidazolin-1-yl) ethyl, R2 = H; NR1R2 = morpholino; etc.) to give  
 I. I at 4-100 ppm inhibited the corrosion of SAE 1020 steel coupons in  
 synthetic sea water saturated with air or H2S and in air-saturated 10% brine.  
 Also, I at 2-4 ppm flocculated FeS (25 ppm) in 1% and 5% brines.

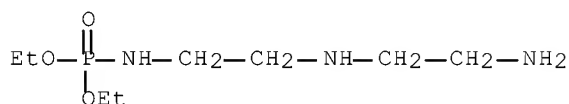
IT 29417-00-3 34008-16-7 34008-18-9  
 (in corrosion prevention, of steel)

RN 29417-00-3 HCAPLUS

CN Phosphoramidic acid, [2-[(2-aminoethyl)amino]ethyl]-, diethyl ester,

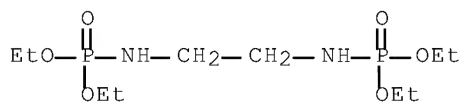
10/555,280

monohydrochloride (8CI, 9CI) (CA INDEX NAME)



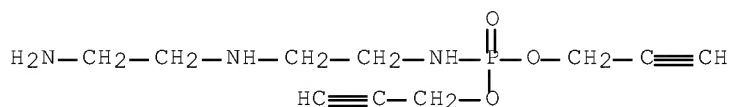
RN 34008-16-7 HCAPLUS

CN Phosphoramidic acid, N,N'-1,2-ethanediylbis-, P,P,P',P'-tetraethyl ester (CA INDEX NAME)



RN 34008-18-9 HCAPLUS

CN Phosphoramidic acid, [2-[(2-aminoethyl)amino]ethyl]-, di-2-propynyl ester, monohydrochloride (8CI, 9CI) (CA INDEX NAME)



IC C23F

INCL 021002500

CC 51 (Petroleum, Petroleum Derivatives, and Related Products)

ST corrosion inhibitor phosphoramidates; sulfide

corrosion inhibitor; steel corrosion

inhibitor; flocculant phosphoramidates; water flocculant

phosphoramidates; brine inhibitor phosphoramidates; polyoxyalkylene

phosphoramidates; phosphoramides polyoxyalkylene inhibitor

IT Glycols, polyethylene, polyester with phosphonic acid

Phosphonic acid, polyester with polyethylene glycol

(in corrosion prevention, of steel)

IT 2817-45-0D, Phosphoramidic acid, diesters, derivs. 7264-96-2

29417-00-3 34008-16-7 34008-18-9

34008-19-0 34033-16-4

(in corrosion prevention, of steel)

L38 ANSWER 27 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN

10/555,280

ACCESSION NUMBER: 1970:498414 HCAPLUS Full-text  
 DOCUMENT NUMBER: 73:98414  
 ORIGINAL REFERENCE NO.: 73:16055a,16058a  
 TITLE: Phosphoramides and their use as corrosion inhibitors, water clarifiers, and flocculants  
 INVENTOR(S): Redmore, Derek  
 PATENT ASSIGNEE(S): Petrolite Corp.  
 SOURCE: U.S., 11 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	---	----	-----	-----
US 3524908	A	19700818	US 1966-596798	19661125
US 4048264	A	19770913	US 1975-619516	19751003
PRIORITY APPLN. INFO.:			US 1966-596798	A3 19661125
			US 1970-26402	A1 19700407

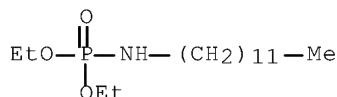
ED Entered STN: 12 May 1984

AB The title compds., which are useful as corrosion inhibitors for Fe, steel, and ferrous alloys in oil wells, for clarifying water containing suspended material, and as flocculants in various industries, are prepared by treating dialkyl phosphites or polyphosphates with amines or polyalkylenepolyamines and polyhalides. Thus, (EtO)<sub>2</sub>P(O)H and CCl<sub>4</sub> are treated with diethylenetriamine for 6 hr at ambient temps. to yield (EtO)<sub>2</sub>P(O)NH(CH<sub>2</sub>CH<sub>2</sub>NH)<sub>2</sub>H.Cl. A polyester of the formula [(OCH<sub>2</sub>CH<sub>2</sub>)<sub>x</sub>OP(O)H]<sub>n</sub> is treated with diethylenetriamine to yield a polyphosphoramide [(OCH<sub>2</sub>CH<sub>2</sub>)<sub>x</sub>OP(O)(NHCH<sub>2</sub>CH<sub>2</sub>NHCH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub>.HCl)]<sub>n</sub>, where x is 8-12 and n is 4-10. Other phosphoramides are prepared by treating didecyl, di-Bu, or dipropargyl phosphites with NH<sub>3</sub>, 1,3-diaminopropane, ethylenediamine, or other primary or secondary amines.

IT 29271-27-0P 29271-28-1P 29417-00-3P  
 (preparation of)

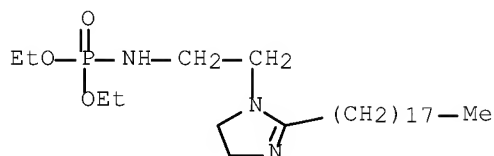
RN 29271-27-0 HCAPLUS

CN Phosphoramidic acid, dodecyl-, diethyl ester (8CI, 9CI) (CA INDEX NAME)



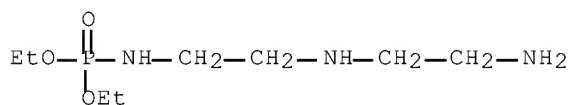
RN 29271-28-1 HCAPLUS

CN Phosphoramidic acid, [2-(2-octadecyl-2-imidazolin-1-yl)ethyl]-, diethyl ester, monohydrochloride (8CI) (CA INDEX NAME)



● HCl

RN 29417-00-3 HCAPLUS  
 CN Phosphoramidic acid, [2-[(2-aminoethyl)amino]ethyl]-, diethyl ester, monohydrochloride (8CI, 9CI) (CA INDEX NAME)



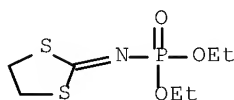
● HCl

IC C02B001-18A; C02B005-00B; C07F009-24B  
 INCL 260959000  
 CC 23 (Aliphatic Compounds)  
 ST suspension clarifiers phosphoramides; water clarifiers phosphoramides; amines phosphite phosphoramides prepn; phosphite amines phosphoramides prepn; phosphoramides prepn; ferrous metal corrosion inhibitor; steel corrosion inhibitor; dialkyl phosphite phosphoramides prepn; polyalkylenepolyamines phosphoramides prepn; flocculants phosphoramides  
 IT Corrosion prevention  
     (diethyl phosphoramidates in)  
 IT 29271-27-0P 29271-28-1P 29417-00-3P  
     (preparation of)

L38 ANSWER 28 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1970:110267 HCAPLUS Full-text  
 DOCUMENT NUMBER: 72:110267  
 ORIGINAL REFERENCE NO.: 72:19905a,19908a  
 TITLE: Experiments to control the alfalfa weevil with hydraulic spray and granular applications  
 AUTHOR(S): Dorsey, Carl K.; Stevens, LeRoy P.; Weaver, J. E.  
 CORPORATE SOURCE: Coll. of Agr. and Forest., West Virginia Univ., Morgantown, WV, USA  
 SOURCE: Bulletin - West Virginia, Agricultural Experiment Station (1969), No. 578T, 25 pp.  
           CODEN: WVABAK; ISSN: 0096-6096  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 ED Entered STN: 12 May 1984  
 AB An efficient program is based on field treatments during the dormant or semidormant alfalfa season to kill ovipositing weevils and eggs either in late Oct. or mid-Nov. or mid-March-mid-April. These treatments need to be followed

with 1 or 2 foliar sprays (to kill feeding larvae) applied in the spring. The 1st application is usually made from mid-to-late April and the 2nd should be applied 2-3 weeks after the 1st. If only foliar sprays are applied in the spring, at least 2 properly spaced ones seem needed to achieve economic control. The most effective candidate insecticidal sprays against weevil larvae at the rates used were: Furadan, Imidan, and American Cyanamid 47470. Phorate was the most effective granular formulation of any of the insecticides when applied in the very early spring at  $\geq 2$  lb/acre. Malathion, azinphosmethyl, and Me parathion sprays, when properly applied, are also effective. The alfalfa weevil can be controlled at an economic level (80% or more population reduction) and hay yields increased if correct procedures are followed.

IT 947-02-4  
 (Hypera postica control by, on alfalfa)  
 RN 947-02-4 HCAPLUS  
 CN Phosphoramidic acid, N-1,3-dithiolan-2-ylidene-, diethyl ester (CA INDEX NAME)



CC 19 (Pesticides)  
 IT 55-38-9 56-38-2 57-74-9 63-25-2 65-30-5 67-68-5, biological  
 studies 86-50-0 114-26-1 121-75-5 298-00-0 298-02-2  
 333-41-5 732-11-6 947-02-4 950-37-8 961-11-5  
 1563-66-2 2782-70-9 6164-98-3 6923-22-4 16537-52-3  
 (Hypera postica control by, on alfalfa)

L38 ANSWER 29 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1967:25480 HCAPLUS Full-text  
 DOCUMENT NUMBER: 66:25480  
 ORIGINAL REFERENCE NO.: 66:4803a,4806a  
 TITLE: Corrosion inhibitor in dry  
 cell batteries  
 INVENTOR(S): Gould, Lawrence P.  
 PATENT ASSIGNEE(S): Allied Chemical Corp.  
 SOURCE: U.S., 2pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3285783		19661115	US 1964-395582	19640910

ED Entered STN: 12 May 1984  
 AB A method for reducing the corrosion of Zn by NH<sub>4</sub>Cl in a dry cell battery consists of incorporating an additive, i.e. [C<sub>12</sub>H<sub>25</sub>NH<sub>3</sub>]+[OP(:O)(OEt)(NHCC<sub>12</sub>H<sub>25</sub>)]- (I) or [C<sub>18</sub>H<sub>37</sub>NH<sub>3</sub>]+[OP(:O)(OC<sub>8</sub>H<sub>17</sub>)(NHCC<sub>18</sub>H<sub>37</sub>)]- (II) with the NH<sub>4</sub>Cl. The additives are effective in quantities from 50-2000 ppm. based on the amount of NH<sub>4</sub>Cl. They are preferably incorporated by dissolving in a volatile solvent and the

solution added to the hot dry crystals of  $\text{NH}_4\text{Cl}$  in a mixing conveyor. Thus, I and II, resp., were dissolved in  $\text{CH}_2\text{Cl}_2$  solvent and mixed with  $\text{NH}_4\text{Cl}$  in an amount sufficient to provide 50 ppm. of the additives prior to its incorporation in the battery. In a test procedure in which the corrosivity was measured by the H evolved and weighing the electrolyte displaced to the nearest 0.1 g., the corrosiveness of the battery containing no inhibitor was 30.9 g. as compared to 2.3 and 5.5 g. for the batteries containing I and II, resp.

IT 14905-53-4, Dodecylamine, compound with ethyl dodecylphosphoramidate (1:1) 15503-52-3  
(corrosion inhibitor, for zinc in dry cell batteries)

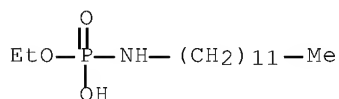
RN 14905-53-4 HCAPLUS

CN Phosphoramidic acid, dodecyl-, monoethyl ester, compd. with dodecylamine (1:1) (8CI) (CA INDEX NAME)

CM 1

CRN 7408-27-7

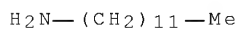
CMF C14 H32 N O3 P



CM 2

CRN 124-22-1

CMF C12 H27 N



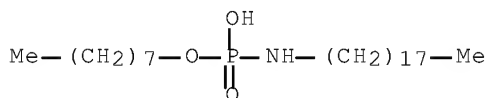
RN 15503-52-3 HCAPLUS

CN Phosphoramidic acid, octadecyl-, monoethyl ester, compd. with octadecylamine (1:1) (8CI) (CA INDEX NAME)

CM 1

CRN 45304-58-3

CMF C26 H56 N O3 P





CM 2

CRN 124-30-1  
CMF C18 H39 N

$$\text{H}_2\text{N}-(\text{CH}_2)_{17}-\text{Me}$$

INCL 136107000  
CC 77 (Electrochemistry)  
ST BATTERY CORROSION INHIBITOR; CORROSION  
INHIBITOR; INHIBITOR CORROSION; DRY CELL  
CORROSION INHIBITOR  
IT Batteries, primary  
(corrosion prevention in, inhibitors for)  
IT Corrosion prevention  
(inhibitors for, phosphoramidic acid alkyl ester compds. with  
amines)  
IT Octadecylamine, monoctyl octadecylphosphoramidate  
Phosphoramidic acid, dodecyl-, ethyl ester, compound with dodecylamine  
(1:1)  
(corrosion inhibitor, for zinc in dry cell  
batteries)  
IT 14905-53-4, Dodecylamine, compound with ethyl  
dodecylphosphoramidate (1:1) 14905-53-4, Phosphoramidic  
acid, dodecyl-, monoethyl ester, compound with dodecylamine (1:1)  
14905-53-4 15503-52-3  
(corrosion inhibitor, for zinc in dry cell  
batteries)

L38 ANSWER 30 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 1966:507112 HCAPLUS Full-text  
DOCUMENT NUMBER: 65:107112  
ORIGINAL REFERENCE NO.: 65:19912b-e  
TITLE: Aminomethanephosphonate copolymers  
INVENTOR(S): Sims, Homer J.; Bauer, La Verne N.; Preuss, Albert  
F., Jr.  
PATENT ASSIGNEE(S): Rohm & Haas Co.  
SOURCE: 10 pp.  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 3268450		19660823	US 1965-460572	19630515
PRIORITY APPLN. INFO.:			US	19630515

ED Entered STN: 22 Apr 2001  
AB Preparation of copolymers containing aminomethanephosphonates  
R1R2C[P(O)(OR3)2] NR4CH2CH2-OR5, for imparting dispersant and anti-rust  
properties, pour point depressing action, and improvements in viscosity to  
lubricating and fuel compns. is described. Thus, a mixture containing 300  
parts lauryl myristyl methacrylate, 40 parts toluene, and 0.68 part tert-Bu

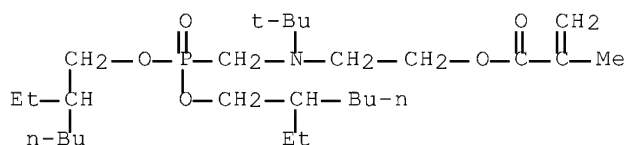
perbenzoate (85%) is added to a flask at 130°. The lauryl myristyl methacrylate is the ester prepared from a com. alc. containing 4% decanol, 66.4% dodecanol, 27.2% tetradecanol, and 2.4% hexadecanol. The bath temperature is maintained at 120-30° for 1.67 h. when a second monomer mixture containing 60 parts lauryl myristyl methacrylate, 40 parts tert-butylaminoethyl methacrylate, and 0.21 part tert-Bu perbenzoate (85%) is added. Addns. of 1.16 parts tert-Bu perbenzoate (10%) in 20 parts toluene are made at 3.67, 5.67, 6.33, and 7.0 h. resp. A solution of 1.74 parts of this same catalyst solution in 20 parts toluene is added in 5 h. When the reaction is considered complete at 7.0 h. 100 parts toluene is added. The resulting toluene solution is 52% copolymer, representing a polymer yield of 82%. A sample (179 parts) of the 52% copolymer is further diluted with 150 parts toluene. Aqueous CH<sub>2</sub>O (4.05 parts of 37% concentration) is added dropwise during 30 min. with stirring. The mixture is heated at 40° for 30-40 min. Di-Me phosphite (5.5 parts) is then added in 30 min. The reaction is completed by heating 1 h. at 40°. The H<sub>2</sub>O from the aqueous CH<sub>2</sub>O and from the reaction is removed by azeotropic distillation with toluene at 30-50 mm. The reaction mixture is kept at 35-40° during the drying step. The solvent is removed giving a final weight of 237 parts of copolymer corresponding to 41.5% yield.

IT 15622-53-4

(Derived from data in the 7th Collective Formula Index (1962-1966))

RN 15622-53-4 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[[[bis[(2-ethylhexyl)oxy]phosphinyl)methyl](1,1-dimethylethyl)amino]ethyl ester (CA INDEX NAME)

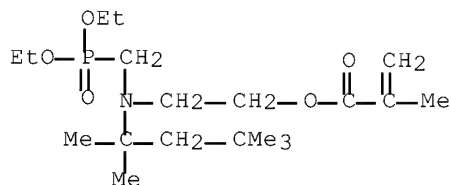


IT 14235-58-6, Methacrylic acid, ester with di-Et

[(2-hydroxyethyl)(1,1,3,3-tetramethylbutyl)amino]methylphosphonate (copolymers containing, as additives for lubricants and fuels)

RN 14235-58-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[[[(diethoxyphosphinyl)methyl](1,1,3,3-tetramethylbutyl)amino]ethyl ester (CA INDEX NAME)



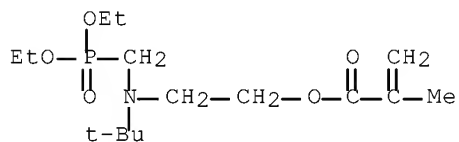
IT 14235-57-5, Methacrylic acid, ester with di-Et

[tert-butyl(2-hydroxyethyl)amino]methylphosphonate

(copolymers with di-Et [tert-butyl(2-hydroxyethyl)amino] containing, as additives for lubricants and fuels)

RN 14235-57-5 HCAPLUS

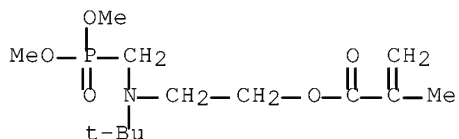
CN 2-Propenoic acid, 2-methyl-, 2-[[ (diethoxyphosphinyl)methyl] (1,1-dimethylethyl)amino]ethyl ester (CA INDEX NAME)



IT 14206-25-8P, Phosphonic acid,  
[tert-butyl(2-hydroxyethyl)amino]methyl-, dimethyl ester, methacrylate  
14235-55-3P, Phosphonic acid,  
[[2-hydroxyethyl)tridecylamino]methyl]-, dimethyl ester, methacrylate  
15622-54-5P, Phosphonic acid,  
[tert-butyl(2-hydroxyethyl)amino]methyl-, diethyl ester, acrylate  
(preparation of)

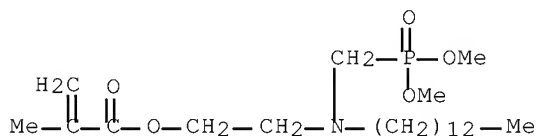
RN 14206-25-8 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[[ (dimethoxyphosphinyl)methyl] (1,1-dimethylethyl)amino]ethyl ester (CA INDEX NAME)



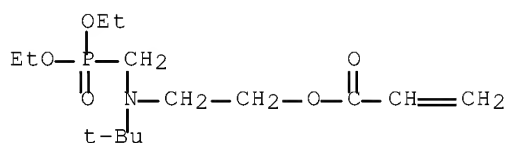
RN 14235-55-3 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-  
[[ (dimethoxyphosphinyl)methyl]tridecylamino]ethyl ester (CA INDEX  
NAME)



RN 15622-54-5 HCAPLUS

CN 2-Propenoic acid, 2-[[[(diethoxyphosphinyl)methyl](1,1-dimethylethyl)amino]ethyl ester (CA INDEX NAME)



INCL 252049900  
 CC 27 (Petroleum and Petroleum Derivatives)  
 IT Corrosion and Corrosion prevention  
 (aminomethane-phosphonate copolymers in)  
 IT 4379-03-7 15622-53-4  
 (Derived from data in the 7th Collective Formula Index (1962-1966))  
 IT 79-41-4, Methacrylic acid, esters with bis(2-chloroethyl)  
 [tert-butyl(2-hydroxyethyl)amino]methylphosphonate 79-41-4,  
 Methacrylic acid, esters with bis(ethylhexyl)  
 [tert-butyl(2-hydroxyethyl)amino]methylphosphonate 79-41-4,  
 Methacrylic acid, esters with di-Me  
 [[(2-hydroxyethyl)tridecylamino]methyl]phosphonate 14235-58-6  
 , Methacrylic acid, ester with di-Et  
 [(2-hydroxyethyl)(1,1,3,3-tetramethylbutyl)amino]methylphosphonate  
 (copolymers containing, as additives for lubricants and fuels)  
 IT 14235-57-5, Methacrylic acid, ester with di-Et  
 [tert-butyl(2-hydroxyethyl)amino]methylphosphonate  
 (copolymers with di-Et [tert-butyl(2-hydroxyethyl)containing, as  
 additives for lubricants and fuels)  
 IT 14206-25-8P, Phosphonic acid,  
 [tert-butyl(2-hydroxyethyl)amino]methyl-, dimethyl ester, methacrylate  
 14235-55-3P, Phosphonic acid,  
 [[(2-hydroxyethyl)tridecylamino]methyl]-, dimethyl ester, methacrylate  
 14235-56-4P, Phosphonic acid, [tert-butyl(2-hydroxyethyl)amino]methyl-  
 , bis(2-chloroethyl) ester, methacrylate 15622-54-5P,  
 Phosphonic acid, [tert-butyl(2-hydroxyethyl)amino]methyl-, diethyl  
 ester, acrylate  
 (preparation of)

L38 ANSWER 31 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1966:507111 HCAPLUS Full-text  
 DOCUMENT NUMBER: 65:107111  
 ORIGINAL REFERENCE NO.: 65:19911h,19912a-b  
 TITLE: p-Phenylenediacetic acid for lubricating  
 compositions  
 INVENTOR(S): Lowe, Warren  
 PATENT ASSIGNEE(S): Chevron Research Co.  
 SOURCE: 2 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
US 3245910		19660412	US	19631118
PRIORITY APPLN. INFO.:			US	19631118

ED Entered STN: 22 Apr 2001  
 AB cf. CA 64, 19289b. Lubricating oil compns. containing 3.0 weight %  
 polybutenyl succinimide detergent (I), which is prepared from 1 mol

10/555,280

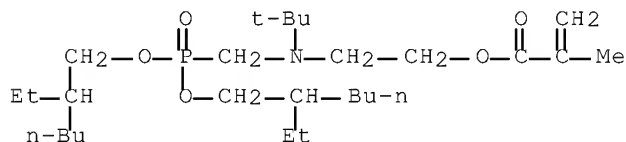
polybutenylsuccinic anhydride (.apprx.C65 alkenyl chain) and 1 mol H<sub>2</sub>N(CH<sub>2</sub>CH<sub>2</sub>NH)<sub>4</sub>H, and 0.01-0.5 weight % p-phenylenediacetic acid (II), which inhibits corrosion, are prepared. Thus, a mixture of 800 mL. MeOH, 200 mL. water, and 100 g. KCN is agitated 1 h. at 60-5°, 176 g. 1,4-C<sub>6</sub>H<sub>4</sub>(CH<sub>2</sub>Br)<sub>2</sub> is added in .apprx.1 h., and the mixture is agitated 6 h. at 60-5° to give 48% p-phenylenediacetonitrile (III). A mixture of 38 g. III, 53 mL. water, 53 mL. H<sub>2</sub>SO<sub>4</sub>, and 53 mL. HOAc is agitated 1 h. at 120-30° to give 97.2% II. A paraffinic neutral oil (SAE 30 grade) containing 3.0 weight % I and 0.15 weight % II is prepared; an L-4 Engine Test gives a bearing weight loss of 228 mg., a piston valve rating of 10.0 as compared with 282 and 8.6, resp., for the control (terephthalic acid).

IT 15622-53-4

(Derived from data in the 7th Collective Formula Index (1962-1966))

RN 15622-53-4 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[[[bis[(2-ethylhexyl)oxy]phosphinyl)methyl](1,1-dimethylethyl)amino]ethyl ester (CA INDEX NAME)



INCL 252051500

CC 27 (Petroleum and Petroleum Derivatives)

IT Corrosion and Corrosion prevention  
(aminomethane-phosphonate copolymers in)

IT Lubricants  
(corrosion inhibitors for, p-phenylenediacetic acid as)

IT 15622-53-4

(Derived from data in the 7th Collective Formula Index (1962-1966))

L38 ANSWER 32 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1962:477250 HCAPLUS Full-text

DOCUMENT NUMBER: 57:77250

ORIGINAL REFERENCE NO.: 57:15424d-f

TITLE: Additives for diester lubricants for aircraft gas turbines

INVENTOR(S): Todd, Alexander R.; Blanchard, Peter M.

PATENT ASSIGNEE(S): British Petroleum Co. Ltd.

SOURCE: 5 pp.

DOCUMENT TYPE: Patent

LANGUAGE: Unavailable

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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DE 1126056		19620322	DE 1960-B0059924	19601031
PRIORITY APPLN. INFO.:			GB	19591030

ED Entered STN: 22 Apr 2001

AB Improved load characteristics, anticorrosive properties, and viscosity index are obtained upon adding 1-5% by weight of an additive to a diester lubricant

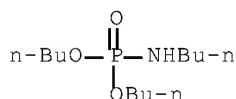
for gas turbines in airplanes. The additive consists of a mixture of aminophosphonates,  $R'O(R'2O)P(O)NR_2R_3$ , in which R and R1 are alkyl, cycloalkyl, aryl, or aralkyl groups, R2 is H or an alkyl group, and R3 is H or an alkyl, cycloalkyl, aryl, or aralkyl group (R2 and R3 may be attached to a ring). The diester lubricant contains one or more compds. of the formula  $ROOCR'COOR$ , in which R is a C4-18 alkyl group and R' is a C4-14 alkylene group.

IT 5756-07-0

(Derived from data in the 7th Collective Formula Index (1962-1966))

RN 5756-07-0 HCAPLUS

CN Phosphoramidic acid, butyl-, dibutyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT 6626-39-7, Phosphoramidic acid, diethyl-, dibutyl ester

13021-77-7, Phosphoramidic acid, cyclohexyl-, dibutyl ester

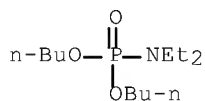
13024-84-5, Phosphoramidic acid, phenyl-, dibutyl ester

13024-85-6, Phosphoramidic acid, benzyl-, dibutyl ester

(as lubricant (ester) additive)

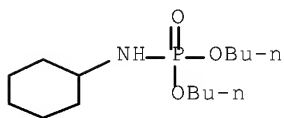
RN 6626-39-7 HCAPLUS

CN Phosphoramidic acid, diethyl-, dibutyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



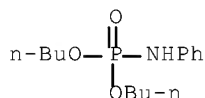
RN 13021-77-7 HCAPLUS

CN Phosphoramidic acid, N-cyclohexyl-, dibutyl ester (CA INDEX NAME)

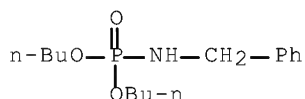


RN 13024-84-5 HCAPLUS

CN Phosphoramidic acid, N-phenyl-, dibutyl ester (CA INDEX NAME)



RN 13024-85-6 HCAPLUS  
 CN Phosphoramidic acid, (phenylmethyl)-, dibutyl ester (9CI) (CA INDEX NAME)



INCL 23C  
 CC 52 (Petroleum and Petroleum Derivatives)  
 IT Lubricants  
     (corrosion inhibitors, extreme-pressure  
     additives and viscosity index improvers for diester,  
     aminophosphonates as)  
 IT 3905-76-8 5756-07-0  
     (Derived from data in the 7th Collective Formula Index (1962-1966))  
 IT 6626-39-7, Phosphoramidic acid, diethyl-, dibutyl ester  
 7264-96-2, Phosphonic acid, morpholino-, dibutyl ester  
 13021-77-7, Phosphoramidic acid, cyclohexyl-, dibutyl ester  
 13024-82-3, Phosphoramidic acid, bis(2-ethylhexyl) ester  
 13024-84-5, Phosphoramidic acid, phenyl-, dibutyl ester  
 13024-85-6, Phosphoramidic acid, benzyl-, dibutyl ester  
     (as lubricant (ester) additive)

L38 ANSWER 33 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1962:3116 HCAPLUS  
 DOCUMENT NUMBER: 56:3116  
 ORIGINAL REFERENCE NO.: 56:635h  
 TITLE: Motor-fuel additives  
 INVENTOR(S): Blum, Dieter; Nottes, Guenther; Pasedach, Heinrich  
 PATENT ASSIGNEE(S): Badische Anilin- & Soda-Fabrik Akt.-Ges.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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DE 1099257		19610209	DE 1959-B52570	19590321
GB 895628			GB	

ED Entered STN: 22 Apr 2001

AB Additives for gasolines to prevent the formation of ice in carburetors and to act as corrosion inhibitors consist of alkyl alkenyl orthophosphoric acid ester monoamides.

IT 91972-69-9F, Phosphoramidic acid, cyclohexyl-, butyl  
 2-propynyl ester 93534-41-9F, Phosphoramidic acid,

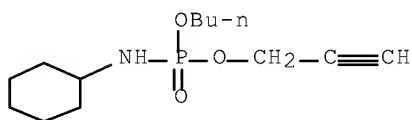
10/555,280

cyclohexyl-, butyl Pr ester 95868-84-1P, Phosphoramidic acid, octadecyl-, butyl Pr ester 95960-70-6P, Phosphoramidic acid, 9-octadecenyl-, butyl 2-propynyl ester 95961-01-6P, Phosphoramidic acid, octadecyl-, butyl 2-propynyl ester 95961-33-4P, Phosphoramidic acid, 9-octadecenyl-, butyl Pr ester

(preparation of)

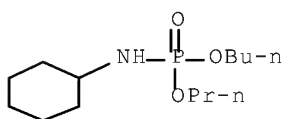
RN 91972-69-9 HCAPLUS

CN Phosphoramidic acid, cyclohexyl-, butyl 2-propynyl ester (7CI) (CA INDEX NAME)



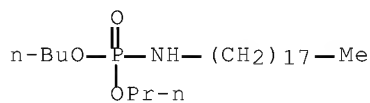
RN 93534-41-9 HCAPLUS

CN Phosphoramidic acid, cyclohexyl-, butyl propyl ester (7CI) (CA INDEX NAME)



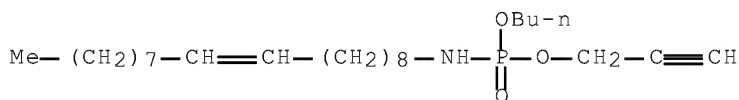
RN 95868-84-1 HCAPLUS

CN Phosphoramidic acid, octadecyl-, butyl propyl ester (7CI) (CA INDEX NAME)



RN 95960-70-6 HCAPLUS

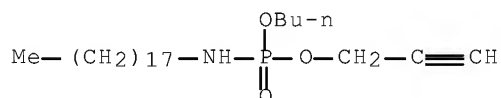
CN Phosphoramidic acid, 9-octadecenyl-, butyl 2-propynyl ester (7CI) (CA INDEX NAME)



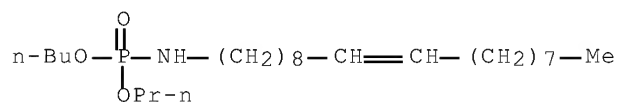


10/555,280

RN 95961-01-6 HCAPLUS  
CN Phosphoramidic acid, octadecyl-, butyl 2-propynyl ester (7CI) (CA  
INDEX NAME)



RN 95961-33-4 HCAPLUS  
CN Phosphoramidic acid, 9-octadecenyl-, butyl propyl ester (7CI) (CA  
INDEX NAME)



INCL 46A  
CC 52 (Petroleum and Petroleum Derivatives)  
IT Corrosion and Corrosion prevention  
(by gasoline, alkyl alkenyl phosphoric acid ester amides for)  
IT 91972-69-9P, Phosphoramidic acid, cyclohexyl-, butyl  
2-propynyl ester 93534-41-9P, Phosphoramidic acid,  
cyclohexyl-, butyl Pr ester 95868-84-1P, Phosphoramidic  
acid, octadecyl-, butyl Pr ester 95960-70-6P, Phosphoramidic  
acid, 9-octadecenyl-, butyl 2-propynyl ester 95961-01-6P,  
Phosphoramidic acid, octadecyl-, butyl 2-propynyl ester  
95961-33-4P, Phosphoramidic acid, 9-octadecenyl-, butyl Pr  
ester 96468-41-6P, Phosphoramidic acid, 9-octadecenyl-, butyl  
1-ethynylcyclohexyl ester 99871-43-9P, Phosphoramidic acid,  
dodecyl-, 2-propynyl tolyl ester 101123-42-6P, Phosphoramidic acid,  
dodecyl-, propyl tolyl ester 105184-98-3P, Phosphoramidic acid,  
9-octadecenyl-, butyl ethylcyclohexyl ester  
(preparation of)

L38 ANSWER 34 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 1961:22587 HCAPLUS  
DOCUMENT NUMBER: 55:22587  
ORIGINAL REFERENCE NO.: 55:4427a-c  
TITLE: Diamine N,N,N',N'-tetrakis(phosphoric acid)  
derivatives  
INVENTOR(S): Debo, Arno  
PATENT ASSIGNEE(S): Chemische Fabrik Joh. A. Benckiser G. m. b. H.  
SOURCE From: C.Z. 1959, 13361..  
DOCUMENT TYPE: Patent  
LANGUAGE: Unavailable  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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DE 1047781	19581231	DE 1957-B45883	19570831
GB 847050		GB	
US 2951088	19600830	US 1958-753083	19580804

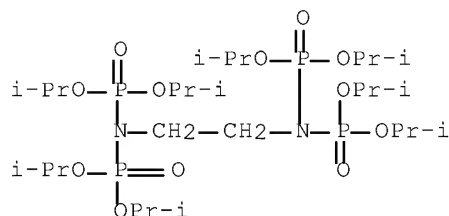
ED Entered STN: 22 Apr 2001

AB Preparation of the title compds.,  $[(RO)2P(O)]2NR'N[P(O)(OR)2]2$ , where R is an alkyl or aryl group and R' is a bifunctional hydrocarbon group of at least 2 C atoms, is described. Diamine N,N'-bis(phosphoric acid) derivs.,  $(RO)2P(O)NHR'NHP(O)(OR)2$ , react with chlorophosphoric acid diesters in an inert, anhydrous organic solvent in the presence of the equivalent amount of a NaOH suspension. Thus, ethylenediamine-N,N'-bis(phosphoric acid di-iso-Pr ester) and chlorophosphoric acid di-iso-Pr ester in xylene in the presence of a 50% NaOH-oil suspension give ethylenediamine-N,N,N',N'-tetrakis(phosphoric acid di-iso-Pr ester), colorless oil,  $n_{20D} 1.4232$ . The following compds. are prepared similarly: p-phenylenediamine-N,N,N',N'-tetrakis(phosphoric acid di-Bu ester), reddish-brown oil; and hexamethylenediamine-N,N,N',N'-tetrakis(phosphoric acid di-Ph ester), wax, m.  $79-82^{\circ}$ . The compds. are useful as intermediates and as additives to lubricants and hydraulic fluids.

IT 119438-36-7P, Imidodiphosphoric acid, ethylenebis-, octaisopropyl ester 119571-77-6P, Imidodiphosphoric acid, p-phenylenebis-, octabutyl ester (preparation of)

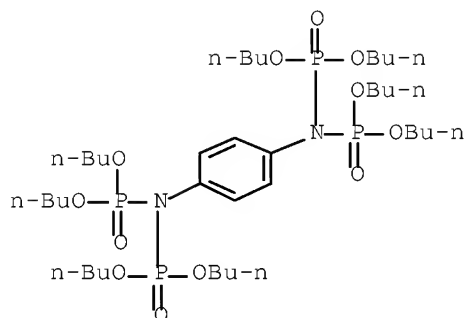
RN 119438-36-7 HCAPLUS

CN Imidodiphosphoric acid, ethylenebis-, octaisopropyl ester (6CI) (CA INDEX NAME)



RN 119571-77-6 HCAPLUS

CN Imidodiphosphoric acid, p-phenylenebis-, octabutyl ester (6CI) (CA INDEX NAME)



CC 10E (Organic Chemistry: Benzene Derivatives)  
 IT 119436-36-7P, Imidodiphosphoric acid, ethylenebis-,  
 octaisopropyl ester 119571-77-6P, Imidodiphosphoric acid,  
 p-phenylenebis-, octabutyl ester 122447-63-6P, Imidodiphosphoric  
 acid, hexamethylenebis-, octaphenyl ester  
 (preparation of)

L38 ANSWER 35 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1960:128601 HCAPLUS  
 DOCUMENT NUMBER: 54:128601  
 ORIGINAL REFERENCE NO.: 54:24554d-f  
 TITLE: N-Substituted diimido triphosphoric acid esters  
 INVENTOR(S): Debo, Arno  
 PATENT ASSIGNEE(S): Chemische Fabrik. Joh. A. Benckiser G. m. b. H.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 2942020		19600621	US 1958-771243	19581103

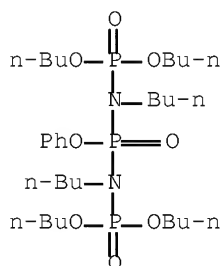
ED Entered STN: 22 Apr 2001

AB The title compds. were effective viscosity stabilizers for hydraulic oils and plasticizers, especially for polyvinyl chloride. (PhO)2POCl (27 g.) was added to a solution of 16.2 g. PhOPO(NHPh)2 in 150 g. xylene and 13 g. 20% NaH suspension in xylene added; an exothermic reaction took place with loss of H. The mixture was filtered, the filtrate evaporated, the sirup dissolved in 80% EtOH, passed through Dowex 2 and then through Dowex 50, the eluate distilled and the residue cooled to give 77% (PhO)2P(O)NPhP(O)(OPh)NPhP(O)(OPh)2, glass, soluble in EtOH and xylene, insol. in water and petr. ether. PhOPO(NHBu)2 (I) (28.4 g.) and 45.7 g. (BuO)2POCl gave 76.5% (BuO)2P(O)NBuP(O)(OPh)NBuP(O)(OBu)2, yellow oil, nD20 1.4629. BuNH2 (5.8 g.) in 150 cc. benzene was treated dropwise with 42 g. PhOPOCl2 to give 81% I, m. 54°.

IT 121473-34-5P, Diimidotriphosphoric acid, N,N'-dibutyl-,  
 tetrabutyl phenyl ester  
 (preparation of)

RN 121473-34-5 HCAPLUS

CN Diimidotriphosphoric acid, dibutyl-, tetrabutyl phenyl ester (6CI)  
 (CA INDEX NAME)



CC 10E (Organic Chemistry: Benzene Derivatives)  
 IT 120830-95-7P, Diimidotriphosphoric acid, N,N'-diphenyl-, pentaphenyl  
 ester 121473-34-5P, Diimidotriphosphoric acid,

N,N'-dibutyl-, tetrabutyl phenyl ester  
(preparation of)

L38 ANSWER 36 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1958:103834 HCAPLUS  
DOCUMENT NUMBER: 52:103834  
ORIGINAL REFERENCE NO.: 52:18215c-f  
TITLE: Vinyl ethers of amidophosphate and amidophosphate esters and their polymers  
INVENTOR(S): Melamed, Sidney  
PATENT ASSIGNEE(S): Rohm & Haas Co.  
DOCUMENT TYPE: Patent  
LANGUAGE: Unavailable  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2842527		19580708	US 1954-460757	19541006

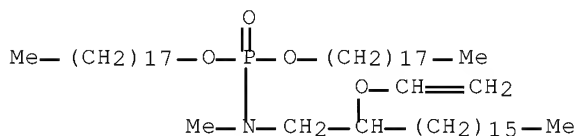
ED Entered STN: 22 Apr 2001

AB A disubstituted chlorophosphate or chlorothiophosphate was treated with vinyl ether amines in the presence of an HCl acceptor to give the corresponding derivs. Thus, 29 g. 2-amino-2-methylpropyl vinyl ether and 150 ml. toluene was added to a slurry of 20.7 g. K<sub>2</sub>CO<sub>3</sub> and 25 ml. H<sub>2</sub>O, cooled to 5°, and 43 g. (0.25 mole) di-Et chlorophosphate added slowly while stirring and keeping the temperature at 5-10° for 2 hrs., the organic layer washed with H<sub>2</sub>O, dried, and concentrated to give 43 g. di-Et N-(1,1-dimethyl-2-vinyloxyethyl)amidophosphate. Also prepared were the following amidophosphates: di-Et N-methyl-N-vinyloxyethyl, di-Me N-(5-vinyloxypropyl), di-Me N-(10-vinyloxydecyl), diallyl N-methyl-N-vinyloxyethyl, dicyclohexyl N-cyclohexyl-N-vinyloxyethyl, dibenzyl N-cyclohexyl-N-vinyloxyethyl, didodecylbenzyl N-cyclohexyl-N-vinyloxyethyl, di-Ph N-methyl-N-(2-vinyloxypropyl), di-Me N-ethyl-N-vinyloxyethyl, di-Ph N-benzyl-N-vinyloxyethyl, dioctadecyl N-methyl-N-(2-vinyloxyoctadecyl), didodecyl N-methyl-N-(2-vinyloxydodecyl), di-Et N-(4-vinyloxyoctadecyl), O,O'-ethylene N-methyl-N-vinyloxyethyl, CH<sub>2</sub>:CHOCHMeCH<sub>2</sub>NMePO(OC<sub>6</sub>H<sub>4</sub>Cl)<sub>2</sub>, CH<sub>2</sub>:CHOCH<sub>2</sub>CH<sub>2</sub>NMePO(OC<sub>6</sub>H<sub>4</sub>C<sub>9</sub>H<sub>19</sub>)<sub>2</sub>, and CH<sub>2</sub>:CHOC<sub>10</sub>H<sub>20</sub>NHPO(OEt)<sub>2</sub>. These compds. are valuable as antioxidants, corrosion inhibitors, plasticizers, lubricating oil additives, etc., and may also be polymerized and copolymerized by conventional methods to give products useful as flame retardants, modifiers of resins, etc.

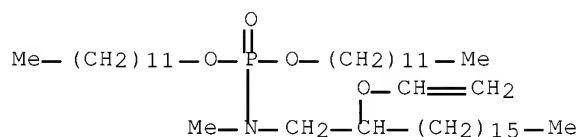
IT 103512-05-6 103566-91-2 114986-58-2  
118979-61-6  
(Derived from data in the 6th Collective Formula Index (1957-1961))

RN 103512-05-6 HCAPLUS

CN Phosphoramidic acid, methyl(2-vinyloxyoctadecyl)-, dioctadecyl ester  
(6CI) (CA INDEX NAME)

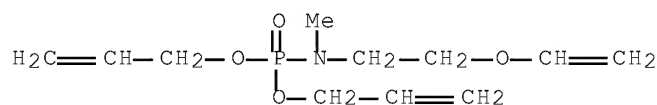


RN 103566-91-2 HCAPLUS  
CN Phosphoramidic acid, methyl(2-vinyloxyoctadecyl)-, didodecyl ester  
(6CI) (CA INDEX NAME)



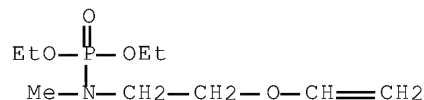
RN 114986-58-2 HCAPLUS

CN Phosphoramidic acid, methyl(2-vinyloxyethyl)-, diallyl ester (6CI)  
(CA INDEX NAME)



RN 118979-61-6 HCAPLUS

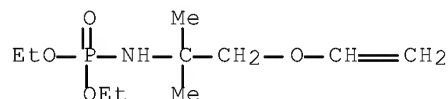
CN Phosphoramidic acid, methyl(2-vinyloxyethyl)-, diethyl ester (6CI)  
(CA INDEX NAME)



IT 99178-11-7P, Phosphoramidic acid,  
(1,1-dimethyl-2-vinyloxyethyl)-, diethyl ester 100396-10-9P,  
Phosphoramidic acid, (4-vinyloxycyclohexyl)-, diethyl ester  
100708-24-5P, Phosphoramidic acid, (5-vinyloxypentyl)-,  
dimethyl ester 100887-93-2P, Phosphoramidic acid,  
(10-vinyloxydecyl)-, dimethyl ester 101432-95-5P,  
Phosphoramidic acid, (1,1,5-trimethyl-7-vinyloxyheptyl)-, diethyl  
ester 857178-23-5P, Allyl alcohol,  
methyl(2-vinyloxyethyl)phosphoramidate 857218-44-1P,  
1-Octadecanol, methyl(2-vinyloxyoctadecyl)phosphoramidate  
(preparation of)

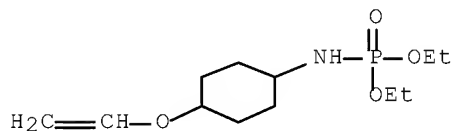
RN 99178-11-7 HCAPLUS

CN Phosphoramidic acid, (1,1-dimethyl-2-vinyloxyethyl)-, diethyl ester  
(6CI) (CA INDEX NAME)



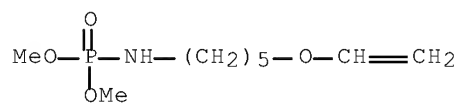
RN 100396-10-9 HCAPLUS

CN Phosphoramidic acid, (4-vinyloxycyclohexyl)-, diethyl ester (6CI) (CA INDEX NAME)



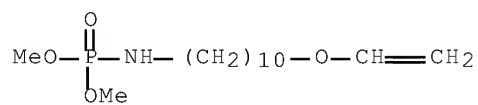
RN 100708-24-5 HCAPLUS

CN Phosphoramidic acid, (5-vinyloxypentyl)-, dimethyl ester (6CI) (CA INDEX NAME)



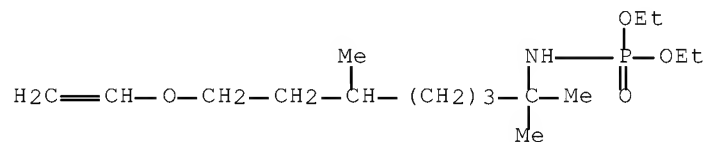
RN 100887-93-2 HCAPLUS

CN Phosphoramidic acid, (10-vinyloxydecyl)-, dimethyl ester (6CI) (CA INDEX NAME)



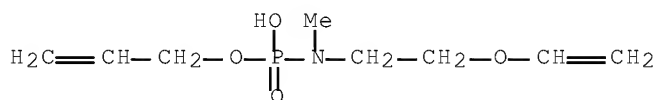
RN 101432-95-5 HCAPLUS

CN Phosphoramidic acid, (1,1,5-trimethyl-7-vinyloxyheptyl)-, diethyl ester (6CI) (CA INDEX NAME)

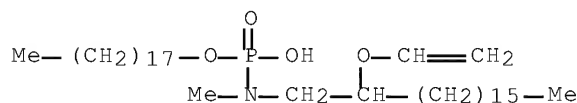


RN 857178-23-5 HCAPLUS

CN Allyl alcohol, methyl(2-vinyloxyethyl)phosphoramidate (6CI) (CA INDEX NAME)



RN 857218-44-1 HCAPLUS  
 CN 1-Octadecanol, methyl(2-vinyloxyoctadecyl)phosphoramidate (6CI) (CA INDEX NAME)



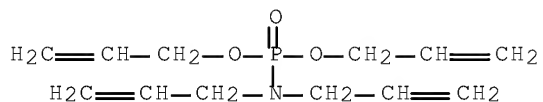
CC 10B (Organic Chemistry: Aliphatic Compounds)  
 IT Corrosion  
 (prevention of, phosphoramidic and phosphoramidothioic acid derivs. in)  
 IT 13199-30-9 101745-69-1 102897-05-2 102944-80-9  
 103512-05-6 103566-91-2 109599-74-8 111414-19-8  
 114986-58-2 118979-61-6 119771-61-8 120582-70-9  
 (Derived from data in the 6th Collective Formula Index (1957-1961))  
 IT 99178-11-7P, Phosphoramidic acid,  
 (1,1-dimethyl-2-vinyloxyethyl)-, diethyl ester 100396-10-9P,  
 Phosphoramidic acid, (4-vinyloxycyclohexyl)-, diethyl ester  
 100708-24-5P, Phosphoramidic acid, (5-vinyloxypropyl)-,  
 dimethyl ester 100887-93-2P, Phosphoramidic acid,  
 (10-vinyloxydecyl)-, dimethyl ester 101432-95-5P,  
 Phosphoramidic acid, (1,1,5-trimethyl-7-vinyloxyheptyl)-, diethyl  
 ester 102656-20-2P, Phosphoramidothioic acid,  
 benzyl(2-vinyloxyethyl)-, O,O-diphenyl ester 108371-73-9P,  
 Phosphoramidothioic acid, ethyl(2-vinyloxyethyl)-, O,O-dimethyl ester  
 119015-12-2P, 1,3,2-Dioxaphospholane,  
 2-[methyl(2-vinyloxyethyl)amino]-, 2-oxide 119015-12-2P, Ethylene  
 glycol, cyclic methyl(2-vinyloxyethyl)phosphoramidate 856994-78-0P,  
 Phenol, p-chloro-, methyl(2-vinyloxypropyl)phosphoramidate  
 857178-23-5P, Allyl alcohol,  
 methyl(2-vinyloxyethyl)phosphoramidate 857218-44-1P,  
 1-Octadecanol, methyl(2-vinyloxyoctadecyl)phosphoramidate  
 859928-26-0P, Cyclohexanol, cyclohexyl(2-vinyloxyethyl)phosphoramidate  
 (preparation of)

L38 ANSWER 37 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1952:57288 HCAPLUS  
 DOCUMENT NUMBER: 46:57288  
 ORIGINAL REFERENCE NO.: 46:9580c-h  
 TITLE: Unsaturated aliphatic amino phosphine oxides  
 INVENTOR(S): Walter, Geo. E.; Hornstein, Irwin; Steinberg, Geo.  
 M.  
 PATENT ASSIGNEE(S): Glenn L. Martin Co.

DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

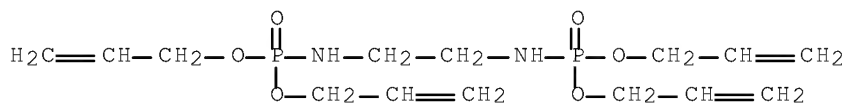
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
	US 2574516		19511113	US 1948-62234	19481126
ED	Entered STN: 22 Apr 2001				
AB	<p>The preparation of unsatd. aliphatic phosphonamides from a mono-chlorophosphate or from a dialkene phosphite by the conversion to amides with NH<sub>3</sub>, RNH<sub>2</sub>, or R<sub>2</sub>NH; e.g., allyl alc. 116, PhMe 116, and pyridine 182 are cooled to -20 to -30°, POCl<sub>3</sub> 153 parts added with agitation over a 3-hr. period, the temperature raised to 0°, the precipitate of C<sub>5</sub>H<sub>5</sub>N.HCl filtered off, the diallylchlorophosphine oxide vacuum-distilled, dissolved in PhMe, anhydrous NH<sub>3</sub> bubbled through the solution until alkaline, the NH<sub>4</sub>Cl filtered, and the PhMe evaporated; the residue is diallylamino phosphine oxide, (H<sub>2</sub>C:CHCH<sub>2</sub>O)P(:O)NH<sub>2</sub> (I). Allyl alc. 174 and PhMe 174 are cooled to -20 to -30° in an apparatus protected by a drying tube, PCl<sub>3</sub> 137.5 in PhMe 70 parts added at such a rate as to keep the temperature between -20 to -30°, which is then held at -20° for 1.5 hrs., the HCl removed with a stream of dry air, the temperature raised to 0°, the residual HCl removed by passing NH<sub>3</sub> into the mixture at 0°, the NH<sub>4</sub>Cl filtered off, and the filtrate distilled in vacuo after the addition of 0.1 part hydroquinone to retard polymerization, giving diallyl phosphite, (H<sub>2</sub>C:CHCH<sub>2</sub>O)P(OH) (II), b<sub>2</sub> 80°, in high yield. II 162 in CCl<sub>4</sub> 154 is diluted with CCl<sub>4</sub> 350 parts, C<sub>6</sub>H<sub>6</sub>, or PhMe, the mixture cooled to -15 to -20°, anhydrous NH<sub>3</sub> passed in with good stirring until the solution is alkaline, the precipitated NH<sub>4</sub>Cl filtered off, the residue vacuum-distilled, and the solvents removed at 40°, leaving I, m. 12-14°. An alternate method consists of converting II to I without isolating II. Diallyl (hydroxymethylamino)phosphine oxide, (H<sub>2</sub>C:CHCH<sub>2</sub>O)P(:O)NHCH<sub>2</sub>OH (III), is prepared from I 177 in com. 40% HCHO solution 85 parts let stand 48 hrs. at room temperature III 207 with I 177 parts are allowed to stand 48 hrs., and the water removed by vacuum distillation, yielding [(H<sub>2</sub>C:CHCH<sub>2</sub>O)P(:O)NH]CH<sub>2</sub> (IV), a water-insol. solid, readily polymerizable; or I 177 and HCHO 15 parts in com. 40% HCHO yields IV with similar treatment. Allylamine 114 is added dropwise with stirring to II 162 in CCl<sub>4</sub> 300 parts at 10-20°, the amine-HCl is filtered off after 1-2 hrs., the CCl<sub>4</sub> distilled, and diallyl(allylamino)phosphine oxide, b<sub>2</sub> 115-20°, recovered by vacuum distillation. Diallyl(diallylamino)phosphine oxide is prepared similarly with diallylamine. [(H<sub>2</sub>C:CHCH<sub>2</sub>O)P(:O)NHCH<sub>2</sub>]<sub>2</sub> is prepared similarly from (CH<sub>2</sub>NH<sub>2</sub>)<sub>2</sub>. Aminodipropargylphosphine oxide is similarly prepared from CH<sub>2</sub>tplbond.CCH<sub>2</sub>OH. These compds. are useful in preparing flameproofing agents, plasticizers, waterproofing agents, lubricating oil modifiers, hydraulic fluid modifiers, corrosion inhibitors, insecticides, fungicides, etc.</p>				
IT	<p>713527-98-1P, Phosphoramidic acid, diallyl-, diallyl ester        856798-97-5P, Phosphoramidic acid, ethylenedi-, tetraallyl ester        856799-77-4P, Phosphoramidic acid, allyl-, diallyl ester        856800-72-1P, Phosphoramidic acid, methylenedi-, tetraallyl ester        857434-88-9P, Phosphoramidic acid, (hydroxymethyl)-, diallyl ester        (preparation of)</p>				
RN	713527-98-1 HCAPLUS				
CN	Phosphoramidic acid, di-2-propenyl-, di-2-propenyl ester (9CI) (CA INDEX NAME)				





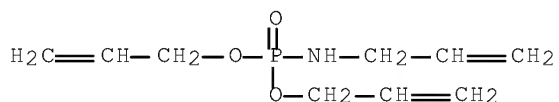
RN 856798-97-5 HCAPLUS

CN Phosphoramidic acid, ethylenedi-, tetraallyl ester (5CI) (CA INDEX NAME)



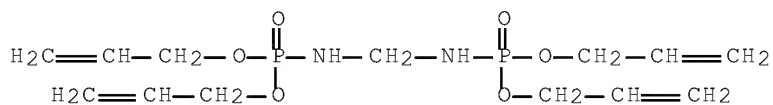
RN 856799-77-4 HCAPLUS

CN Phosphoramidic acid, allyl-, diallyl ester (5CI) (CA INDEX NAME)



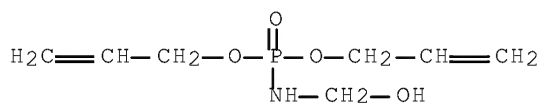
RN 856800-72-1 HCAPLUS

CN Phosphoramidic acid, methylenedi-, tetraallyl ester (5CI) (CA INDEX NAME)



RN 857434-88-9 HCAPLUS

CN Phosphoramidic acid, (hydroxymethyl)-, diallyl ester (5CI) (CA INDEX NAME)



CC 10 (Organic Chemistry)

IT Hydraulic systems  
     (fluids for, phosphoramidic acid esters for modifying)

IT Corrosion  
     (prevention of, agents for)

IT 23679-20-1P, Allyl phosphite,  $(C_3H_5O)_2(HO)P$  713527-98-1P,  
 Phosphoramidic acid, diallyl-, diallyl ester 856798-97-5P,  
 Phosphoramidic acid, ethylenedi-, tetraallyl ester  
 856799-77-4P, Phosphoramidic acid, allyl-, diallyl ester  
 856800-72-1P, Phosphoramidic acid, methylenedi-, tetraallyl  
 ester 857225-96-8P, 2-Propynyl amidophosphate,  $(C_3H_3O)_2(H_2N)PO$   
 857225-96-8P, 2-Propynyl phosphoramidate,  $(C_3H_3O)_2(H_2N)PO$   
 857434-88-9P, Phosphoramidic acid, (hydroxymethyl)-, diallyl  
 ester  
     (preparation of)

=> d his nofile

(FILE 'HOME' ENTERED AT 13:54:28 ON 15 DEC 2008)

FILE 'HCAPLUS' ENTERED AT 13:54:34 ON 15 DEC 2008

L1           1 SEA ABB=ON   PLU=ON   US20060156960/PN  
              SEL RN

FILE 'REGISTRY' ENTERED AT 13:54:45 ON 15 DEC 2008

L2           16 SEA ABB=ON   PLU=ON   (100-37-8/BI OR 102-71-6/BI OR  
              105-59-9/BI OR 108-01-0/BI OR 109-83-1/BI OR 110-73-6/BI  
              OR 111-41-1/BI OR 111-42-2/BI OR 126-73-8/BI OR 13780-06-8/  
              BI OR 141-43-5/BI OR 37971-36-1/BI OR 6419-19-8/BI OR  
              74654-07-2/BI OR 762-04-9/BI OR 786706-61-4/BI)

L3           STR

L4           50 SEA SSS SAM L3

L5           STR L3

L6           50 SEA SSS SAM L5

L7           23648 SEA SSS FUL L5  
              SAV L7 MAR280/A

L8           STR L5

L9           50 SEA SUB=L7 SSS SAM L8

L10          12175 SEA SUB=L7 SSS FUL L8  
              SAV L10 MAR280A/A

L11          STR L8

L12          39 SEA SUB=L7 SSS SAM L11

L13          683 SEA SUB=L7 SSS FUL L11

L14          594 SEA ABB=ON   PLU=ON   L13 NOT M/ELS

L15          89 SEA ABB=ON   PLU=ON   L13 NOT L14

L16          36 SEA ABB=ON   PLU=ON   L15 AND (LI OR NA OR K OR RU OR FR OR  
              BE OR MG OR CA OR SR OR BA OR RA)/ELS

L17          0 SEA ABB=ON   PLU=ON   L15 AND AMMONIUM SALT?

L18          11770 SEA ABB=ON   PLU=ON   L10 NOT M/ELS

L19          405 SEA ABB=ON   PLU=ON   L10 NOT L18

L20          280 SEA ABB=ON   PLU=ON   L19 AND (LI OR NA OR K OR RU OR FR OR  
              BE OR MG OR CA OR SR OR BA OR RA)/ELS

L21          0 SEA ABB=ON   PLU=ON   L19 AND AMMONIUM SALT?

L22          0 SEA ABB=ON   PLU=ON   L7 AND L2

FILE 'HCAPLUS' ENTERED AT 14:12:52 ON 15 DEC 2008

L23          299 SEA ABB=ON   PLU=ON   L14

L24          11 SEA ABB=ON   PLU=ON   L16

L25          5033 SEA ABB=ON   PLU=ON   L18

L26          159 SEA ABB=ON   PLU=ON   L20

L27          QUE ABB=ON   PLU=ON   (L23 OR L24 OR L25 OR L26)

L28          QUE ABB=ON   PLU=ON   (CEMENTITIOUS? OR CONCRET? OR CEMENT?  
              OR GYPSUM? OR HYDRAULIC BINDER? OR HYDRAULIC?)

L29          8 SEA ABB=ON   PLU=ON   L27 AND L28

L30          24 SEA ABB=ON   PLU=ON   L27 AND   CORROSION INHIBITOR?  
              E   CONCRETE/CT

L31          82305 SEA ABB=ON   PLU=ON   CONCRETE+PFT,NT/CT

L32          0 SEA ABB=ON   PLU=ON   L27 AND L31

L33          25 SEA ABB=ON   PLU=ON   L27 AND   CORROSION(A) (INHIBIT? OR  
              PREVENT?)

L34          0 SEA ABB=ON   PLU=ON   L27 AND STEEL REINFORC?

L35          32 SEA ABB=ON   PLU=ON   L29 OR L30 OR L32 OR L33 OR L34

L36          0 SEA ABB=ON   PLU=ON   L35 AND CONCRET?/SC, SX

L37          5 SEA ABB=ON   PLU=ON   L27 AND CONCRET?/SC, SX

10/555,280

L38

37 SEA ABB=ON PLU=ON L35 OR L37